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542. Catellani (G.). **Un caso di micosi in un Bufalo. Isolamento di un micete della specie Trichosporon pullulans.** [A case of mycosis in a Buffalo. Isolation of *T. pullulans*.]—*Acta med. vet., Napoli*, **6**, pp. 359–370, 9 fig., 1960. [Fr., Engl. summ. *V.B.*, **31**, No. 1068.]

An account of a study at Univ. Naples of an infection of the spinus process of the 3rd lumbar vertebra. The lesion took the form of a nodular, subcutaneous neoformation containing abscesses, and there was a purulent process spreading on the bone. The fungus isolated was identified as *T. pullulans* and it is thought likely that infection was via a skin trauma.

543. Araviĭskiĭ (A. N.) & Kashkin (P. N.). Кокцидиоидный микоз. [Coccidioidomycosis.]—124 pp., 29 fig., 1960. [Engl. summ. (pp. 115–116). 7½ pp. ref.]

This monograph reviews the literature on *Coccidioides immitis* infections and discusses the clinical and mycological characteristics of a similar disease which occurs in U.S.S.R. In tissue, spherules 15–60 μ diam., with or without a homogenous capsule, are formed. Cultures are greyish-white, and slightly downy. The Russian disease is less virulent than the American. Special stress is laid on the only lesions being chronic and granulomatous, and fatalities absent. Therapy with sulphadimezine, vitamin B1, and streptomycin has proved effective.

544. Hyde (L.). **Coccidioidal pulmonary cavitation.**—*Amer. J. Med.*, **25**, 6, pp. 890–897, 2 fig., 1 map, 1958. [21 ref.]

Data on 77 cases of coccidioidal pulmonary cavitation are summarized from the Veterans Administration Hosp., Long Beach, Calif. Cavitation is found in 1–3% of patients hospitalized with *Coccidioides immitis* infection and in c. 0·1% of all cases. Of the group studied 58% were asymptomatic (detection by X-ray examination); 86% had a single cavity, 14% multiple cavities; 58% had cavities in the right lung, 42% in the left, and 3 patients had bilateral cavities; 57% gave positive coccidioidin skin reaction; 64% had positive complement fixation antibodies.

On the basis of experience with non-surgical and surgical management it is concluded that a conservative, non-surgical regimen appears most desirable for coccidioidal pulmonary cavity unless (1) the cavity is over 4 cm. diam.; (2) the cavity is enlarging significantly; (3) there are recurrent severe haemoptyses.

545. Juaneda (A.), Ferreyra-Videla (M.), & Escarguel-Malbran (J.). **Coccidioidomicosis. A propósito de un caso tratado quirúrgicamente.** [Coccidioidomycosis. Report of a case treated surgically.]—*Torax, Montevideo*, **9**, 2, pp. 105–112, 1960. [Engl. summ.]

The 16th case in Argentina is reported in the province of Córdoba.

546. Perry (D. M.) & Kirby (W. M. M.). **Acute disseminated coccidioidomycosis : two cases treated with amphotericin B.**—*Arch. intern. Med.*, **105**, 6, pp. 929–934, 3 fig., 1960. [13 ref. *T.D.B.*, **58**, pp. 520–521.]

Details of 2 cases at King County Hosp., Seattle, of severe disseminated *Coccidioides immitis* infection, in 29- and 56-yr.-old Negroes, which responded dramatically to intravenous amphotericin B therapy. One patient, however, relapsed, responded poorly to re-treatment, and died.

547. Gonzalez (J.). **Lepra y coccidioidomicosis. Estudio de un caso con ambos padecimientos.** [Leprosy and coccidioidomycosis. Study of a case with both ailments.]—*Dermatología, Méx.*, **4**, 2, pp. 113–119, 1960. [Engl. summ.]

Treatment with amphotericin B and diaminodiphenylsulphone (avlosulfon) proved efficient.

548. Pappagianis (D.), Smith (C. E.), Kobayashi (G. S.), & Saito (Margaret T.). **Studies of antigens from young mycelia of Coccidioides immitis.**—*J. infect. Dis.*, **108**, 1, pp. 35–44, 1961.

In further studies at the Naval Biol. Lab., Sch. Publ. Hlth, Univ. Calif., Berkeley, cell-free, soluble antigens of *C. immitis* str. Silveira were prepared by lysis of 3-day-old mycelium in the presence of toluene [**4**, No. 158]. The resultant solutions contained 60–70% of the original mycelial mass in soluble form, and $\frac{1}{10}$ of the soluble solids were non-dialysable, representing the immunologically active material. This fraction contained 60–70% polysaccharide (mainly mannose, with some galactose and another reducing sugar) and 3–4% amino N.

The lysates contained antigens active in the complement-fixation test and were devoid of anti-complementary activity. They failed to react significantly with serum from human histoplasmosis. Activity for both the precipitin and dermal sensitivity tests was demonstrated. One lysate was tested in mice and appeared to increase resistance to intraperitoneal challenge with *C. immitis*.

The complement-fixing activity was thermolabile and diminished by acidification to pH 3, but it was unaffected by papain and stable in ethanol $< 80\%$. Fractional precipitation with ethanol yielded fractions retaining both precipitin and complement-fixing activities at lower concs. At 80% ethanol the precipitate showed precipitin antigen but no complement-fixing activity, denoting a measure of separability of these 2 qualities.

549. Pappagianis (D.), Levine (H. B.), Smith (C. E.), Berman (R. J.), & Kobayashi (G. S.). **Immunization of Mice with viable Coccidioides immitis.**—*J. Immunol.*, **86**, 1, pp. 28–34, 1961. [18 ref.]

At Naval Biol. Lab., Sch. Public Health, Univ. Calif., Berkeley, mice vaccinated with non-living vaccine prepared from mycelium and arthrospores of *C. immitis* survived challenge doses given intraperitoneally, but not intranasally. Vaccination with viable arthrospores from strs. of varying virulence gave immunity to challenge by both routes. A riboflavin-dependent str. of very low virulence gave immunity to intranasal challenge with up to 200 arthrospores, and immunity was increased by vaccinating by subcutaneous and intranasal routes concurrently; however, this str. tended to revert to virulence *in vivo*. Optimal immunization may result from combining several preparations of vaccine and routes of administration.

550. Brandt (N. J.). **Kryptokokkose, torulosis eller europaeisk blastomykose; en oversigt.** [Cryptococcosis, torulosis or European blastomycosis. A survey.]—*Ugeskr. Laeg.*, **121**, 29, pp. 1121–1123, 1959. [18 ref.]

A review of cryptococcosis (*Cryptococcus neoformans*).

551. Frágner (P.). **Cryptococcus Kützing emend. Vuillemin (Monografické zpracování rodu).** [*Cryptococcus*. Generic monograph.]—*Čes. Mykol.*, **15**, 2, pp. 107–123, 19 fig., 1961. [21 ref.]

This monograph gives a key to the 10 accepted spp. which are described.

552. Jacobs (L. G.). **Pulmonary torulosis.**—*Radiology*, **71**, 3, pp. 398–403, 6 fig., 1958. [Interlingua summ.]

As a result of a review of 10 cases of *Cryptococcus neoformans* infections (clinical

details of which are tabulated) seen during a 10-yr. period at VA Hosp., Oakland, Calif., the author pictures the disease as a generally benign infection healing by formation of a fibrocaseous nodule in which organisms morphologically typical of *C. neoformans* are seen on microscopic examination but cannot be cultured. Active cases with progressive pulmonary or extrapulmonary involvement show, possibly, 60% mortality. In cases limited to the lung, cure by resection may be obtained.

553. Khan (M. J.), Myers (Ruth), & Koshy (Grace). **Pulmonary cryptococcosis. A case report and experimental study.**—*Dis. Chest*, **36**, pp. 656–660, 4 fig., 1959.

A case, successfully treated by resection, of *Cryptococcus neoformans* infection in a 59-yr.-old man is reported from the Christian med. Coll. & Hosp., Vellore, S. India.

Notes are given on the intracerebral, intranasal, subcutaneous, and intraperitoneal inoculation of mice with the isolate obtained.

554. Buitrago-García (E.) & Gómez-Arango (S.). **Comprobación de un caso de criptococosis.** [Verification of a case of cryptococcosis.]—*Caldas Médico*, **1**, 2, pp. 5–16, 6 fig., 1960. [Engl. summ. 53 ref.]

This case of *Cryptococcus neoformans* infection of the right shoulder-blade and left parotid regions of a 37-yr.-old woman, investigated at the med. Faculty Hosp., Caldas Univ., Manizales, Colombia, is claimed as the 1st record for the province of Caldas. Amphotericin B therapy was successful.

555. Eriksen (K. R.), Jensen (E.), Reske-Nielsen (E.), Stenderup (A.), & Videbaek (A.). **Et tilfaelde af kryptokokkose (torulose).** [A case of cryptococcosis (torulosis).]—*Ugeskr. Laeg.*, **121**, 29, pp. 1127–1131, 1959.

Direct microscopic examination and culture revealed *Cryptococcus neoformans* in the cerebro-spinal fluid of a 32-yr.-old male patient in Copenhagen, Denmark. At autopsy disseminated cryptococcal infection was demonstrated. In addition *Candida pseudotropicalis* was isolated from all the organs and *C. albicans* was found in the lungs and intestinal contents.

556. Brandt (N. J.) & Strürup (H.). **Kryptokokmeningitis behandlet med amphoterecin B. Et tilfaelde hos en patient med histologisk diagnosticeret Boecks sarkoid.** [Cryptococcal meningitis treated with amphotericin B. A case in a patient with histologically confirmed Boeck's sarcoidosis.]—*Ugeskr. Laeg.*, **121**, 29, pp. 1132–1134, 1959.

The case here described from the Nakskov Sygehus, Denmark, was of *Cryptococcus neoformans* infection in a 58-yr.-old woman. Amphotericin B, administered intravenously in doses varying from 17–50 mg. daily up to max. 517 mg., cleared up the condition rapidly and the cerebro-spinal fluid became sterile.

557. Bernard (L. A.) & Owens (J. C.). **Isolated cryptococcosis associated with Boeck's sarcoid. Report of a case treated with amphotericin B.**—*Arch. intern. Med.*, **106**, 1, pp. 101–111, 12 fig., 1 graph, 1960.

At Baylor Univ. Coll. Med., Houston, Texas, a 44-yr.-old Negress responded satisfactorily to a total of 1060 mg. amphotericin B administered intravenously after removal of a soft tissue mass, which yielded *Cryptococcus neoformans*, involving the 3rd and 4th thoracic vertebrae.

558. Baum (G. L.) & Artis (Dorothy). **Growth inhibition of Cryptococcus neoformans by cell free human serum.**—*Amer. J. med. Sci.*, **241**, 5, pp. 613–616, 1 fig., 1961.

It is reported from Veterans Administration Hosp. and Univ. Cincinnati Coll.

Med., Ohio that the growth of *C. neoformans* was completely or partially inhibited by the addition of serum from 7 patients (with various non-mycotic diseases) and 3 normal persons to Sabouraud's dextrose containing 5–500,000 cells/ml. Heating serum at 56° C. for 30 min. did not affect its inhibitory ability [cf. **4**, No. 598].

559. Yamamoto (S.), Ishida (K.), & Sato (A.). **Isolation of Cryptococcus neoformans from pulmonary granuloma of a Cat and from Pigeon droppings.**—*Jap. J. vet. Sci.*, **19**, 6, pp. 179–191, 2 pl., 1 fig., 1957. [In Engl. Jap. summ. 23 ref.]

In Mar. 1957, at Univ. Tokyo, the authors isolated *C. neoformans* from a pulmonary granuloma in a cat, the pathological findings being described. A description is also given of a case of 'blastomycosis' in the pelvic cavity of a horse in the author's collection. Investigations into the susceptibility of laboratory animals to the cat isolate of *C. neoformans* indicated that the mouse was the most susceptible, followed by the rat, and then the guinea-pig. Nineteen isolates of the fungus were made from 24 specimens of pigeon-droppings [**4**, No. 172] and 1 from skylark droppings collected in Tokyo.

560. Silva (M. E.). **Ocorrência de Cryptococcus neoformans e Microsporum gypseum em solos da Bahia, Brasil.** [A record of *C. neoformans* and *M. gypseum* in soils from Bahia, Brazil.]—*Bol. Fund. G. Moniz*, 17, 14 pp., 1960. [Engl. version, pp. 7–13. 23 ref.]

Both are 1st records from soil in Brazil. *C. neoformans* was isolated from 6·6% of 90 soil samples collected at Jacobina, Bahia, and *M. gypseum* from 28·8%. Of the 6 *C. neoformans* strs., 3 were isolated from areas frequented by chickens, 2 from areas frequented by pigs, and 1 from an area apparently free from domestic animals.

561. Abrahams (I.) & Gilleran (T. G.). **Studies on actively acquired resistance to experimental cryptococcosis in Mice.**—*J. Immunol.*, **85**, 6, pp. 629–635, 1960. [12 ref.]

At Cornell Univ. med. Coll., N.Y., effective resistance to lethal challenge with *Cryptococcus neoformans* was induced in mice by vaccination with suspensions of formalin-killed cells [**3**, No. 1339]. On the basis of experimental studies the following methods were adopted: vaccination comprised 5 intraperitoneal inoculations of 4×10^7 cells and 3 subcutaneous injections of 8×10^7, administered over a 14-day period, while challenge tests were performed 7 days after the last vaccine dose with 2,000–10,000 cells (approx. 20–100 LD_{50}) of strain C or one of comparable virulence. The superior immunogenicity of a vaccine consisting principally of small as compared with large capsules was demonstrated by the results of a test in which the survival rates were 73 and 14%, respectively.

Confirmatory evidence of the efficiency of immunization was obtained from the cultural and histological examination of animals killed at intervals after challenge. Multiplication of the fungus was largely inhibited in the livers and spleens of the vaccinated group, whereas logarithmic rates of growth were observed in the corresponding organs of the untreated.

562. Gadebusch (H. H.) & Starkweather (W. H.). **Ultraviolet absorption spectra of cryptococcal capsular polysaccharides.**—*Z. Naturf.*, **14** B, 9, p. 620, 1 graph, 1960.

Results of studies already noticed on serological types A, B, and C of *Cryptococcus neoformans* [**4**, No. 176].

563. Gadebusch (H. H.). **Specific degradation of Cryptococcus neoformans 3723 capsular polysaccharide by a microbial enzyme. II. Biological activity of the**

enzyme. III. Antibody stimulation by partially decapsulated cells.—*J. infect. Dis.*, **107**, 3, pp. 402–405, 1 graph; pp. 406–409, 1961.

The intracellular enzyme isolated from the above-mentioned str. was capable of decapsulating viable and non-viable cells of the same str. but not of 2 others in *in vitro* and *in vivo* experiments. Mice inoculated with str. 3723 were temporarily protected by daily administration of enzyme.

Partially decapsulated (enzymatic) cells of the same isolate induced high-titre antisera which effectively protected mice against a lethal challenge dose of encapsulated *C. neoformans* during the immunization period, which extended over a min. period of 7 months in 30% of the animals. Complete decapsulation was achieved only after 4 exposures to 50 units enzyme for 14 hr. each at 28° C., the cells being washed between the treatments with 3 changes of sterile saline.

564. Jellison (W. L.), Helminen (M.), & Vinson (J. W.). **Presence of a pulmonary fungus in Rodents in Finland.**—Reprinted from *Ann. Med. exp. Fenn.*, **38**, 4, 4 pp., 3 fig., 1960.

In 1959 at the Finnish Game Res. Inst., Helsinki, *Emmonsia* was found in water rats (*Arvicola terrestris*), muskrats (*Ondatra zibethica*), and 1 vole (*Microtus agrestris*) and the identifications were confirmed by culture. The search for rodent pathogens and for *E.* in particular was undertaken because of the presence of a 'field fever' of man of unknown etiology but attributed to association with rodents.

565. Battaglia (S.). **La patogenicità dell'Haplosporangium parvum isolato in Italia.** [The pathogenicity of *Emmonsia parva* isolated in Italy.]—*G. Mal. infett.*, **9**, 8, pp. 498–501, 1957. [*Biol. Abstr.*, **35**, No. 24654.]

Details of the pathologic picture of experimental infection in guinea-pigs at Milan Univ.

566. Rodriguez (C.), Angola (E.), Angulo-Ortega (A.), Pollak (L.), & Kezes (A.). **Formas cavitarias de la histoplasmosis.** [Cavitary forms of histoplasmosis.]—*Rev. Tisiol. neurol. Caracas*, **2**, 1, pp. 93–105, 1960. [Engl. summ.]

From Inst. Nacional de Tuberculosis, El Algodonal, Caracas, Venezuela, 2 cases are reported. Both patients were European and the authors think that the lack of a progressive immunization would favour the development of cavitary, as well as large primary lesions [see below]. *Histoplasma capsulatum* was seen and cultivated after lobectomy from both patients.

567. Angulo-Ortega (A.) & Lares-Gomez (A.). **Complejo primario pulmonar regresivo de etiología histoplasmósica.** [Histoplasmotic regressive primary pulmonary complex.]—*Rev. Tisiol. neurol. Caracas*, **2**, 1, pp. 85–92, 1960. [Engl. summ.]

At Inst. Nacional de Tisiología, Caracas, Venezuela, autopsy of a case revealed a parenchymal, sub-pleural lesion as well as necrotic, cretaceous hylar lymph nodes. Yeast-like cells similar to those of *Histoplasma* were seen in tissue sections stained by Grocott's procedure.

568. Forsee (J. H.) & Pfotenhauer (M.). **Surgical management of focalized pulmonary histoplasmosis.**—*J. Amer. med. Ass.*, **173**, 8, pp. 878–883, 8 fig., 1960. [16 ref.]

At W. Reed general Hosp., Washington, D.C., 57 patients who underwent operation because the possibility of malignancy could not be excluded were found to have pulmonary histoplasmomas. The case histories of 5 of these, males aged 18–40-yr., are given. There were no characteristic findings at operation and diagnosis was confirmed only on the finding of *Histoplasma capsulatum* in the excised nodules.

Of those patients whose progress was followed, only 3 developed major respiratory complaints.

569. Angulo-Ortega (A.), Rodriguez (C.), & Pollak (L.). **Los nódulos solitarios del pulmón causados por el Histoplasma capsulatum.** [Solitary pulmonary nodules due to *H. capsulatum*.]—*Rev. Tisiol. neurol. Caracas*, **2**, 1, pp. 65–75, 1960. [Engl. summ.]

At Inst. Nacional de Tisiología, Caracas, Venezuela, 4 cases of solitary granulomas or 'coin lesions' were attributed to *H. capsulatum* after lobectomy and study of tissue sections stained by Grocott's modification of Gomori's method.

570. Little (J. A.). **Benign primary pulmonary histoplasmosis : a common cause of unexplained fever in Children.**—*Sth. med. J.*, **53**, 10, pp. 1238–1240, 3 fig., 1 diag., 1961.

A report from the Children's Hosp., Louisville, Ky, on 4 cases illustrating the above-mentioned form of infection by *Histoplasma capsulatum*.

571. Little (J. A.) & Steigman (A. J.). **Erythema nodosum in primary histoplasmosis.**—*J. Amer. med. Ass.*, **173**, 8, pp. 875–877, 3 fig., 1960. [*B.H.*, **36**, p. 131.]

At Sch. Med., Univ. Louisville, Ky, skin tests for tuberculosis were negative and histoplasmin reactions markedly positive in 2 children (girl 2, boy $2\frac{3}{4}$) with primary and 2 children (girl $6\frac{1}{2}$, boy $7\frac{1}{2}$) with secondary erythema nodosum.

572. Snyder (C. H.) & White (R. S.). **Successful treatment of Histoplasma meningitis with amphotericin B. A case report.**—*J. Pediat.*, **58**, 4, pp. 554–558, 1961.

The clinical features of the case—a 5-yr.-old boy—and the methods and results of amphotericin B administration, started after the failure of sulphonamide therapy, are reported from the Ochsner Foundation Hosp., New Orleans, La. The toxic effects of intravenous treatment were alarming but transitory, whereas the use of the intrathecal route resulted in paralysis of both legs, which was only partially reversible. The meningitis was completely cleared.

573. Kaplan (W.), Ajello (L.), Di Bitetto (D. B.), & McDonough (E. S.). **The discovery of Histoplasma capsulatum in Connecticut soil incidental to the investigation of a case of feline cryptococcosis.**—*Mycopathologia*, **14**, 1, pp. 1–8, 2 fig., 1961. [22 ref.]

The 7th case of cryptococcosis (*Cryptococcus neoformans*) in a cat [cf. **2**, Nos. 500, 1508] is described, the affected animal being a 5-yr.-old, spayed, female Maltese short-hair that had lived in Connecticut all its life. During an unsuccessful search for the source of infection, *H. capsulatum* was isolated for the 1st time from Connecticut soil. Round to oval forms 1·5–3·5 μ diam. were demonstrated in smears of the soil by staining with fluorescein-labelled anti-*H. capsulatum* globulins. Morphologically, the elements resembled the microconidia of *H. capsulatum*. By the use of this immune conjugate, 5 further positive soil samples from other areas (2 from a cave in Tanganyika, 2 from Venezuela, and 1 from Lexington, Ky) were also shown to contain these forms. None of the 6 soils showed stained elements when treated with normal conjugates.

574. Jackson (D.). **Histoplasmosis. A 'Spelunker's' risk.**—*Amer. Rev. respir. Dis.*, **83**, 2, Pt. 1, pp. 261–263, 1 fig., 1961.

A report from Methodist Hosp., Houston, Texas, of acute pulmonary histoplasmosis in a 24-yr.-old white engineer who became ill 2 weeks after visiting a limestone cave containing bat guano near Torreon, Mexico [**3**, No. 1829b]. Diagnosis was based

on skin and serological tests and chest X-rays, which showed enlarged hilar lymph nodes and soft densities scattered through both lungs. *Histoplasma capsulatum* was not isolated from limestone from the cave and no guano was available for study. Therapy with amphotericin B was instituted but was stopped when side effects developed, and the patient recovered naturally. An associate who entered the cave with the patient developed a brief illness of unknown cause. Previously, 10 Mexicans had developed 'pneumonia' and 4 had died, after visiting the cave.

575. Ajello (L.), Manson-Bahr (P. E. C.), & Moore (Jane C.). **Amboni caves, Tanganyika, a new endemic area for Histoplasma capsulatum.**—*Amer. J. trop. Med. Hyg.*, **9**, 6, pp. 633–638, 2 fig., 1960. [53 ref.]

A report from the Communicable Disease Center, Atlanta, Ga, and King George VI Hosp., Nairobi, Kenya, of the results of an examination of 13 soil samples from the Amboni Caves near Tanga, Tanganyika, following a presumptive diagnosis of histoplasmosis in 2 individuals who had visited the caves [**3**, No. 900]. The caves are inhabited by a large population of bats (*Coleura afra*, *Minopterus minor*, *Tadarida* (*Chaerepha*) *limbata*, and *Tritheniops afer*). *H. capsulatum* was isolated by mouse inoculation from 7 samples [cf. **3**, Nos. 752, 1829b] and *Microsporum gypseum* was isolated from 9 samples by the hair-bait technique [cf. **3**, No. 1286]. Previous reports of infection by *H. capsulatum* and *H. duboisii* in Africa are tabulated and discussed.

576. Nicholas (W. M.), Wier (J. A.), Kuhn (L. R.), Campbell (Charlotte C.), Nolte (L. B.), & Hill (Grace B.). **Serological effects of histoplasmin skin testing.**—*Amer. Rev. respir. Dis.*, **83**, 2, Pt. 1, pp. 276–279, 1961. [18 ref.]

At Fitzsimons General Hosp., Denver, Colo., and Walter Reed Army Inst. Res., Washington, D.C., of 23 subjects who gave a positive skin reaction to histoplasmin but negative complement fixation reaction prior to skin testing, 4 (17·3%) developed a positive complement fixation reaction following a single skin test. No increase of complement fixing antibodies to yeast phase *Histoplasma* or *Blastomyces* antigens, or coccidioidin, was demonstrated. It is suggested that the reliability of complement fixation tests would be enhanced if done prior to, or within 1 week of, histoplasmin skin tests.

577. Raubitschek (F.), Birnbaum (D.), & Rakover (J.). **Histoplasmin sensitivity in Israel.**—*J. Lab. clin. Med.*, **56**, 1, pp. 133–135, 1960. [15 ref. *B.H.*, **35**, p. 1098.]

No histoplasmin skin sensitivity was found in 319 patients tested at Hadassah Univ. Hosp.

578. Edwards (Phyllis Q.), Knight (R. A.), & Marcus (S.). **Skin sensitivity of human beings to Histoplasma capsulatum and Blastomyces dermatitidis polysaccharide antigens.**—*Amer. Rev. respir. Dis.*, **83**, 4, pp. 528–534, 2 fig., 1961. [Span., Fr. summ. 19 ref.]

In a skin test survey conducted by the Tuberculosis Program, Public Health Service, U.S. Dept of Health, Education and Welfare, Washington, D.C., 3,808 naval recruits given routine tests with standard histoplasmin were tested concurrently with polysaccharides from yeast-phase cultures of either *Histoplasma capsulatum* or *Blastomyces dermatitidis*. There were approximately 20% positive reactions to histoplasmin. Of 1,677 recruits tested with *H. capsulatum* polysaccharide 311 were positive to both this and histoplasmin, 1,319 were negative to both, 32 were positive to polysaccharide only and 15 to histoplasmin only. Of 2,131 recruits tested with *B. dermatitidis* polysaccharide only 21 gave reactions of 6–18 mm. suggesting that benign blastomycosis is rare in U.S.A.

579. McDearman (Sara C.) & Young (J. M.). **The development of positive serologic tests with Histoplasma capsulatum antigens following single histoplasmin skin tests.**—*Amer. J. clin. Path.*, **34**, 5, pp. 434–438, 1960. [Interlingua summ. 14 ref.]

Of 40 persons skin-tested at the Veterans Administration med. Teaching Group Hosp., Memphis, Tenn., 29 (72·5%) reacted positively to histoplasmin, and humoral antibodies were demonstrated in the sera of 12 (30); in 10 (25) positive serological reactions developed after the tests were made. The results are reported in detail, tabulated, and discussed.

580. Box (Edith D.) & McShan (Oleta B.). **Chemotherapy of experimental histoplasmosis.**—*Tex. Rep. Biol. Med.*, **18**, 3, pp. 379–394, 1960. [20 ref. *B.H.*, **36**, p. 252.]

At the Dept Microbiol., Univ. Texas, Galveston, a number of quinolines, acridines, antimetabolites, antibiotics, and miscellaneous drugs were tested *in vitro* against the yeast phase of *Histoplasma capsulatum* and *in vivo* against a standardized infection in white mice. Ethyl vanillate [**1**, No. 2142] was not effective in experimental infections. Of the antibiotics, nystatin, eulicin, and amphotericin B were protective; amphotericin B in its soluble desoxycholate form was the most effective drug tested and sterilized lethal infections. Eulicin was equivalent to the insoluble powder form of amphotericin B. Of the antimetabolites tested, phosphanilic acid and sulphadiazine, both para-aminobenzoic acid antagonists, were protective. Sulphadiazine was completely protective but did not sterilize a lethal infection and did not decrease the number of organisms recoverable after treatment of a declining sub-lethal infection.

Human γ-globulin did not potentiate the activity of amphotericin B against experimental infection. Neutralization of a lethal dose occurred when the organisms were incubated with human γ-globulin before inoculation.

581. Garrison (R. G.). **Studies of the respiratory activity of Histoplasma capsulatum. I. Aspects of the aerobic metabolism of the yeast phase.**—*J. infect. Dis.*, **108**, 1, pp. 120–124, 3 graphs, 1961.

At Univ. Kans. med. Center, Kansas City, pH 7 was opt. for glucose metabolism in whole cell suspensions of the yeast phase of *H. capsulatum*. There was no marked effect on endogenous respiration between pH 5 and 8.

Respiration was stimulated by M/300 glucose, mannose, galactose, xylose, ethanol, glycerol, acetate, lactate, pyruvate, and oxalacetate. At low concs. amphotericin B stimulated both endogenous respiration and glucose oxidation, the max. effect being observed at 0·1 μg./ml., whereas at a higher level (1 μg./ml.) the former process was inhibited to the extent of 60%.

582. Nohmi (Nivia), Chapadeira (E.), & Moreira (F.). **Tratamento da doença de Lutz pela associação da N^1-(4-isopropoxi-benzoil)-p-amino-benzeno-sulfamida com a N^1-(4-metil-pirimidil)-2-p-amino-benzeno-sulfamida.** [The treatment of South American blastomycosis with the combination of N^1-(4-isopropoxybenzoil)-p-aminobenzene sulphonamide and N^1-(4-methylpyrymidyl)-2-p-aminobenzene sulphonamide.]—*Hospital* (*Rio de J.*), **58**, 6, pp. 1119–1129, 1960. [Engl. summ.]

At Faculdade de Medicina, Univ. Minas Gerais, Brazil, a patient with oral and pulmonary lesions of *Paracoccidioides brasiliensis* was treated for 15 months with equal amounts of the 2 drugs (as dosulfin Geigy). A daily dose of 3 g. was administered during the 1st month, 2·25 g. during the next 6 months and 1·5 g. during the last 8 months. The treatment was effective.

583. Machado (J.), Rêgo (A. P.), Chaves (A. L. F.), Miranda (J. L.), & Silva (C. C. E.). **Considerações relativas à blastomicose sul-americana. Da participação laringéia e brônquica em 104 casos.** [Considerations on South American blastomycosis. Involvement of the larynx and the bronchi in 104 cases.]—*Hospital* (*Rio de J.*), **58**, 4, pp. 645–658, 1960. [Engl. summ.]

The larynx was involved in 40% of these cases of *Paracoccidioides brasiliensis* infection. Ulceration and oedema of the epiglottis were the most frequent symptoms and 5 deaths were due to glottic stenosis. The bronchial lesions were not obstructive.

584. Machado (J.) & Miranda (J. L.). **Considerações relativas à blastomicose sul-americana. Da participação pulmonar entre 338 casos consecutivos.** [Considerations on South American blastomycosis. Pulmonary involvement in a series of 338 cases.]—*Hospital* (*Rio de J.*), **58**, 3, pp. 431–449, 1960. [Engl. summ.]

Between Nov. 1949–July 1960 the authors recorded 338 cases of S. American blastomycosis at the Hosp. E. Chagas, Rio de Janeiro, Brazil. Pulmonary lesions were evident after X-ray examination in 292 cases, of which 41 are excluded from the following considerations due to association with other pulmonary diseases. Sixteen cases showed lesions only in the lungs and 219 showed lesions in the lungs and in other organs. Micronodular and infiltrative lesions were found in 89·7% and were usually bilateral and symmetrical. The superior areas were less involved than the medium and lower areas. Micro-cavities were found in $\frac{1}{3}$ of the cases and were localized in the medium areas. Large cavities were seldom seen. Endothoracic adenopathy and atelectasis were rarely observed. The pleura was involved in 20 cases.

The lungs are considered as the port of entry in 18·7% of the cases. In 7 cases no lesions were seen in the lungs but *Paracoccidioides brasiliensis* was found in the sputum and probably originated in oral and laryngeal lesions. In 1 case negative on X-ray, pulmonary lesions were discovered after biopsy [**3**, No. 1534]. No calcifications are recorded.

585. Miranda (J. L.), Machado (J.), & Monteiro (E.). **Considerações relativas à blastomicose sul-americana. Do comportamento da proteína C reativa.** [Considerations on South American blastomycosis. The C-reactive protein test.]—*Hospital* (*Rio de J.*), **58**, 2, pp. 251–257, 1960. [Engl. summ.]

At Hosp. E. Chagas, Rio de Janeiro, the sera of two groups of patients were studied. Acute phase protein was found in 30 of 39 patients with active *Paracoccidioides brasiliensis* infection, and in only 4 of 26 patients who had been submitted to specific treatment but did not show active lesions [**3**, Nos. 1078, 1535]. There was a high degree of coincidence between a positive C-reactive protein test and modification of the albumin-globulin ratio [**4**, Nos. 204, 206].

After 1 month of amphotericin B treatment the test was still positive but became negative 1–2 months after treatment ended. When sulphamides were used the test became negative after 6 or more months of continued treatment.

586. Conti-Diaz (I. A.). **Lesiones oculares en la blastomicosis sudamericana.** [Ocular lesions in South American blastomycosis.]—*Hospital* (*Rio de J.*), **58**, 5, pp. 903–914, 1960. [Engl. summ.]

At the Inst. de Higiene, Montevideo, Uruguay, 15 guinea-pigs and 5 rabbits were inoculated intracardially with heavy suspensions of a yeast-like culture of *Paracoccidioides brasiliensis*. Ocular lesions were seen in 12 guinea-pigs and 4 rabbits, the main features being nodular blepharitis, uveitis, and conjunctivitis. Lesions were seen also in the striated external muscles in 1 guinea-pig. Lesions of the eye-

lids in man have been described and the possibility of the existence of lesions of the eyeball is deemed worthy of consideration [see below].

587. Del Negro (G.), Wajchenberg (B. L.), Pereira (V. G.), Shnaider (J.), Cintra (A. B. de Ulhoa), De Assis (L. M.), & Sampaio (S. A. P.). **Addison's disease associated with South American blastomycosis.**—*Ann. intern. Med.*, **54**, 2, pp. 189–197, 2 fig., 1961. [35 ref. Interlingua summ.]

A report from Dept trop. Med. and infectious Diseases and the First med. Clinic, Univ. São Paulo, Brazil, on 3 patients (all males; 2 white, 1 Japanese) successfully treated with sulphamethoxypyridazine (2) or sulphadiazine (1) to control the *Paracoccidioides brasiliensis* infection, and substitution therapy with oral prednisone and intramuscular desoxycorticosterone acetate.

588. Mackinnon (J. E.), Conti-Diaz (I. A.), Yarzabal (L. A.), & Tavella (N.). **Temperatura ambiental y blastomicosis sudamericana.** [Ambient temperature and South American blastomycosis.]—*An. Fac. Med. Montevideo*, **45**, 5–6, pp. 310–318, 1960. [Engl. summ.]

At the Inst. de Higiene, Montevideo, Uruguay, guinea-pigs inoculated intracardially with young cultures of the yeast-like form of *Paracoccidioides brasiliensis* were kept at different ambient temperatures. At 37° C. no lesions developed. At 5–9° C. intense and evolutive lesions developed in the eyelids, eyeballs, muzzle, testicles, some skeletal muscles (especially in the lumbar region), buttocks and thighs, while the diaphragm and psoas muscles remained undamaged. At 14–30° C. the skeletal muscles were not affected but lesions were seen in the eyelids, muzzle, perigenital skin, rectum, testicles, and eyeballs. At 28–30° C. skin lesions were very mild and non-evolutive; at 14–20° C. they were exudative but healed when the animals were placed at 37° C.

The *in vitro* development of the inoculated str. and of a second one was severely impaired at 38° C. and no growth occurred at 39° C. The authors studied the temperature of different regions of the body of guinea-pigs placed at different ambient temperatures and it is inferred that lesions develop only in those regions and organs sufficiently cooled by ambient temperature. The recorded features would explain some clinical and epidemiological aspects of South American blastomycosis and the probability that they may be useful for the management of the patients is mentioned [**3**, Nos. 1533, 1534].

589. Curban (G. V.), Lacaz (C. S.), Belfort (E.), Dillon (N.), & Auada (J.). **Esporotricose diseminada.** [Systemic sporotrichosis.]—*Rev. Hosp. Clin. Fac. Med. S. Paulo*, **15**, 5, pp. 369–371, 1960. [Engl. summ.]

A brief description from São Paulo, Brazil, of a case in a 10-yr.-old boy with gummatous and ulcerous lesions of the skin of the face and limbs, and periostitis of the ulnae and metacarpal bones. *Sporotrichum schenckii* was cultivated and the patient was treated successfully with potassium iodide.

590. Ramírez (Julia). **Esporotricosis. Algunos datos estadísticos a propósito del estudo de un caso.** [Sporotrichosis. Statistical data on a case study.]—*Dermatología, Méx.*, **4**, 2, pp. 120–127, 2 fig., 1960. [Engl. summ.]

At the Dermatological Dept, Hosp. General, Mexico City, sporotrichosis (*Sporotrichum schenckii*) has been diagnosed in 14 females and 9 males. A case localized in the face is reported.

591. Loewenthal (L. J. A.). **Sporotrichosis treated with griseofulvin.**—*Med. Proc.*, **5**, 26, pp. 563–564, 1959. [*B.H.*, **35**, pp. 1098–1099.]

Sporotrichum schenckii was isolated at the S. Afr. Inst. Med. Res., Johannesburg, from a granuloma on the right wrist of a bricklayer and from a nodule on the same

site in a miner injured by a pit prop. Both patients responded favourably to the oral administration of griseofulvin [**3**, No. 1854].

592. Tsubura (E.) & Schwarz (J.). **Treatment of experimental sporotrichosis in Mice.**—*Mycopathologia*, **14**, 1, pp. 55–56, 1961.

At the Jewish Hosp., Cincinnati, Ohio, griseofulvin, amphotericin B, trichomycin, and potassium iodide failed to affect the course of experimental sporotrichosis (*Sporotrichum schenckii*) in mice when an infective dose of $2{\cdot}3 \times 10^5$ cells was injected intravenously.

593. Saenz (G. F.). **Inoculación experimental de Sporotrichum schenckii en embrión de Pollo.** [Experimental inoculation of *S. schenckii* into the Chick embryo.]—*Rev. Biol. trop., S. José*, **8**, 1, pp. 123–143, 1960. [Engl. summ. 10 ref. *B.H.*, **36**, p. 132.]

At Univ. Costa Rica, embryonate eggs were inoculated with *S. schenckii* and kept at 37·5° C. The yeast-phase developed in the yolk sacs of 7-day embryos, the chorioallantoic membrane of 11-day embryos, the albumen sac and amniotic cavity of 11-day embryos, and the shell membrane. Poor results were obtained after inoculation of the allantoic cavity and doubtful or negative results after intracerebral, intravenous, and intramuscular inoculations.

594. Fetter (B. F.). **Human cutaneous sporotrichosis due to Sporotrichum schenckii; technique for demonstration of organisms in tissues.**—*Arch. Path., Chicago*, **71**, 4, pp. 416–419, 3 fig., 1961. [14 ref.]

At the Dept Path., Duke Univ. Sch. Med., Durham, N. Carol., round to oval bodies, occasionally budding or encapsulated, and thought to be the causal organism, were demonstrated in 6 of 8 culturally proven cases of *S. schenckii* infection by processing the slides through xylol to water, and placing them in a 1: 1,000 sol. of malt diastase for 45 min. at 37° C. to eliminate Schiff-positive debris, before staining by the Schiff–McManus technique.

595. Howard (D. H.). **Dimorphism of Sporotrichum schenckii.**—*J. Bact.*, **81**, 3, pp. 464–469, 4 fig., 1961. [23 ref.]

Two morphological transformations were observed during the transition of *S. schenckii* from the mycelial to the yeast phase in tissue cultures of mouse peritoneal exudate cells at Dept infectious Diseases, Sch. Med., Univ. Calif., Los Angeles. In one transformation budding, club-shaped structures were formed at hyphal tips or on lateral branches, and in the other chains of oidia were formed and subsequently fragmented. It was shown that direct conidial budding is not the sole origin of the yeast phase. These results were discussed in the light of other investigations with *Histoplasma capsulatum* [**3**, No. 1353] and *Blastomyces dermatitidis* [**4**, No. 319].

596. Bommer (S.), Haufe (F.), & Haufe (U.). **Beitrag zur Cephalosporiose.** [Contribution to cephalosporiosis.]—*Derm. Wschr.*, **143**, 9, pp. 229–237, 8 fig., 1961.

A full clinical report from the Universitäts-Hautklinik, Greifswald, Germany, on a case of infection by *Cephalosporium acremonium* in a 63-yr.-old female patient, and on the positive results of inoculation experiments on mice, rats, and rabbits, followed by a brief survey of the relevant literature.

597. Harada (S.) & Usui (Y.). **On a species of Cephalosporium isolated from the epidermophytosis between the toes.**—*Nagaoa* 7, pp. 51–53, 2 pl. (6 fig.), 1960. [Jap., Engl. summ.]

A fungus isolated from epidermophytosis between the toes was identified at the Nagao Inst. as *C. keratoplasticum*.

598. Gale (G. R.) & Welch (Ann M.). **Studies of opportunistic fungi. I. Inhibition of Rhizopus oryzae by human serum.**—*Amer. J. med. Sci.*, **241**, 5, pp. 604–612, 7 graphs, 1961. [Interlingua summ. 13 ref.]

Studies at Duke Univ. med. Center, Durham, N. Carol., showed that normal adult serum at 5 and 10% increased the growth of *R. oryzae*; higher concs. were inhibitory, 20–30% completely so. This effect persisted after heating serum at 56° C. for 2 hr. A partially purified globulin fraction of normal serum was not inhibitory. Dialysis removed the inhibitory factors but the removal of properdin did not. Serum from 2 of 6 patients with diabetes, a condition known to predispose to mucormycosis, had a markedly reduced inhibitory ability. It is concluded that the inhibitory factors are different from the anti-*Candida* and anti-dermatophyte complexes studied by Roth *et al.* [**3**, No. 1097; **4**, No. 558].

599. Shelley (W. B.) & Florence (R.). **Chronic urticaria due to mold hypersensitivity. A study in cross-sensitization and auto-erythrocyte sensitization.**—*Arch. Derm., Chicago*, **83**, 4, pp. 549–558, 4 fig., 1961. [24 ref.]

A case report from Dept Derm., Sch. Med., Univ. Pa, on a 40-yr.-old male with chronic recurrent urticaria which probably began as a reaction to a chronic *Trichophyton rubrum* infection of the hands and face. The 1st urticarial attacks began after a course of penicillin and later attacks were induced by tetracycline and chlortetracycline. There was a severe urticarial response to a trichophytin skin test. Treatment with griseofulvin cured the fungus infection but not the urticaria. Skin tests showed that the patient was exquisitely sensitive to *Alternaria* and *Aspergillus*, particularly *A. flavus*. Urticarial reaction also followed intradermal injection of the patient's erythrocytes, which had apparently adsorbed the mould antigens.

Avoidance of mould sites was associated with complete remission of the urticaria and loss of urticariogenic properties of the erythrocytes, but hypersensitivity to trichophytin and *A. flavus* has remained.

600. Fejér (A.). **Allergisches Hautjucken mykogener Genese. (Pruritus allergicus mykogenes.)** [Allergic skin itching of mycogenic origin. (Pruritus allergicus mycogenes).]—*Acta Allerg.* (*Kbh.*), **13**, pp. 427–431, 1959. [Engl. summ.]

A discussion of 3 types differentiated as follows: (1) caused by primary mycoses (principally *Candida* spp.), (2) mycotic-allergic secondary symptoms, the so-called mycids, and (3) mycotic-allergic itching without objective symptoms.

601. Stallybrass (F. C.). **A study of Aspergillus spores in the atmosphere of a modern mill.**—*Brit. J. industr. Med.*, **18**, 1, pp. 41–46, 3 fig., 1961. [17 ref.]

In the studies by the Dept Bact., Royal S. Hants Hosp., Southampton, *A. amstelodami*, *A. repens*, *A. ruber*, *A. clavatus*, *A. flavus*, *A. fumigatus*, and *A. niger* were isolated on Petri dishes of Sabouraud's medium exposed to the atmosphere of a large animal provender mill. Though air pollution with *A.* spores was 30 times higher than that of the town atmosphere, no increased susceptibility to pulmonary aspergillosis was noticed among the workers. Maize was associated with the highest degree of contamination [cf. **4**, No. 507].

602. Kramer (C. C.), Pady (S. M.), & Rogerson (C. T.). **Kansas aeromycology. III. Cladosporium; idem. IV. Alternaria.**—*Trans. Kansas Acad. Sci.*, **62**, 3, pp. 200–207; **63**, 4, pp. 252–256, 1959. [*Biol. Abstr.*, **36**, No. 8470–1. Cf. **3**, No. 170.]

603. Greco (J. B.) & de Almeida (J.). **A year-round study of the atmospheric pollen and fungus spore of Brasilia, the new Federal District of Brazil under construction.**—*Acta allerg.* (*Kbh.*), **14**, 5, p. 377, 1959. [*Biol. Abstr.*, **35**, 29743, 1960.]

604. **Annual Report of the Division of Laboratories and Research, New York State Department of Health, 1960.**—157 pp., 1961.

In this report [cf. **4**, No. 1] Rachel Brown (pp. 50–51) describes the isolation and physical and chemical properties of an antibiotic, produced by a streptomycete, No. 5901, which was effective *in vitro* against *Candida albicans* at 3·12 μg./ml.

M. A. Gordon & E. Lapa (p. 53) describe antifungal antibiotic 123, produced by a *Streptomyces* sp. from soil. The substance was resistant to steam sterilization; it was effective *in vitro* against *Saccharomyces cerevisiae*, *Geotrichum candidum*, and *Microsporum gypseum*, and was not toxic to mice.

M. A. Gordon (pp. 53–54) suggests the use of antibodies coupled with antifungal drugs for use against pathogenic fungi in the human body.

M. A. Gordon, Joan Brennan, H. Gruft, & E. Lapa (pp. 54–55) found that in mice injected with 2 LD_{50} of yeast phase *Histoplasma capsulatum*, 0·5 mg. aminostilbamidine prolonged survival time, as did amphotericin B and nystatin at various dosages. Diaminodiphenylsulfone (DDS) and *H. capsulatum* immune rabbit globulin were not protective, and atoxyl at 2 mg./mouse lowered resistance.

Mice given 2 LD_{50} of yeast phase *Blastomyces dermatitidis* were protected to some extent by daily doses for 5 days of amino-stilbamidine (min. protection dose 0·125 mg./ml.), hydroxystilbamidine (0·25 mg./ml.), amphotericin B (0·5 mg./ml.), and nystatin (6·25 units/ml.). No protection was shown by DDS, atoxyl, synkamin, neoarsphenamine or immune rabbit globulin. Amphotericin B was protective against 2 LD_{50} of *Cryptococcus neoformans*; aminostilbamidine, DDS and synkamin were ineffective although the latter was very effective *in vitro*. Hyperimmune rabbit globulin was protective only during the course of treatment.

M. A. Gordon, H. Gruft, & Joan Brennan (p. 55) found that specific γ-globulin combined with amphotericin B or nystatin exerted synergistic activity against *B. dermatitidis* in mice, but combined with DDS or synkamin was ineffective, while stilbamidine appeared to antagonize the action of globulin. The amphotericin-globulin combination was also effective in *H. capsulatum* infection.

D. J. Dean, M. A. Gordon, C. W. Severinghaus, E. Kroll, & J. R. Reilly (p. 56) discuss the *Dermatophilus* infection of man contracted from deer and noted elsewhere [**4**, No. 643].

M. A. Gordon & G. N. Little (pp. 107–110) report that specimens for routine diagnosis exceeded the total for the previous yr. by 34%, and discuss the specimens examined.

M. A. Gordon, C. H. Greene, & J. C. Elliott (pp. 110–112) discuss results of routine serological tests for *H. capsulatum* and *B. dermatitidis*.

605. **Report on the animal health services in Great Britain, 1959.**—pp. iv+116, London, H.M. Stationery Office, 1961. 6*s*.

Routine examinations for bovine mycotic abortion (p. 46) at Central Vet. Lab., Weybridge [cf. **3**, No. 1873], have increased: 7·5% of foetal stomach contents were positive for fungi. All of 15 cows inoculated intravenously late in pregnancy with *Absidia ramosa*, *Aspergillus fumigatus* or *Candida tropicalis* had infected uteri at parturition and 5 calves were born dead: only 1 animal is considered to have aborted. In preliminary investigations (p. 46; p. 77) abortion has not been induced in in-calf heifers by inhalation exposure to *A. fumigatus* spores: it has not been technically possible to reach the concentration of spores (i.e. 100×the effective intravenous dose) calculated to be necessary by this route.

The incidence of mycotic dermatitis in sheep [*Dermatophilus dermatonomus*] fell during the year (p. 57). Aspergillosis of lambs was again recorded during the spring.

Mucormycotic ulceration of pigs was recorded frequently (p. 61) and a probable new sp. of dermatophyte was isolated from pigs in Kenya.

606. Schabinski (G.). **Grundriss der medizinischen Mykologie.** [Outline of medical mycology.]—xi+183 pp., 5 col. pl., 126 fig., Jena, Gustav Fischer Verlag, 1960. DM. 34.20.

This useful handbook is comprised of an introduction to fungi and mycological techniques (pp. 3–23), sections on European (pp. 25–116) and tropical and subtropical (pp. 117–151) mycoses, and an appendix (pp. 153–177) giving details of a number of common saprophytic moulds and yeasts, the formulae for some standard mycological media and strains, and a glossary. In conclusion is a general index.

Both clinical and mycological aspects of the principal mycoses of man are concisely dealt with under a number of standard headings and each disease is accompanied by a select bibliography. The coloured plates illustrate colonies of a range of pathogenic and saprophytic fungi.

607. Butler (E. J.) & Bisby (G. R.). **The fungi of India.**—Revised by R. S. Vasudeva, 552 pp., 1 map, 1960. [Received Aug. 1961.] 69*s*.

The list of 20 fungi on man in this catalogue of Indian fungi up to 1954 needs to be supplemented by **4**, Nos. 226–7.

608. **Bulletin de la Société française de mycologie medicale.**—1, 15 pp.; 2, 13 pp., 1961.

These Bulletins, which are issued to members, give details of the activities of the French Society for Medical Mycology, founded in 1956.

The 1st is largely devoted to a series of notes by various authors on griseofulvin. In the 2nd F. Mariat & P. Lavalle (pp. 2–6) give tabulated summaries of the mycoses of man culturally and clinically diagnosed over a 4-yr. period at the Lab. de Mycologie du Centre Dermatologique, Pascua, Mexico, where dermatophytes (*Trichophyton tonsurans* 51·05, *T. rubrum* 9·25, *Microsporum canis* 25·95%) accounted for 89·2% of the 4 yr. isolates. The percentages for *Sporotrichum schenckii*, *Candida albicans*, and *Nocardia brasiliensis* were 3·8, 2·14, and 3·47, respectively. In Jan. 1961 a film, 'Teignes et thérapeutiques modernes' by A. Sueur, was shown to the Society.

609. **Mechanism of fungal pathogenicity.**—*Mycopathologia*, **14**, 3, pp. 230–236, 1961.

Abstracts of the 8 papers given at a round table discussion organized by the Chicago med. Mycol. Soc. at the 61st Ann. Meeting of the Amer. Soc. Microbiol., Chicago, 25 Apr. 1961.

a. Marcus (S.), Hill (G. A.), & Knight (R. A.), **Induction of systemic mycotic infection in laboratory animals,** noted that while isolates of *Histoplasma capsulatum*, *Blastomyces dermatitidis*, *Cryptococcus neoformans*, and *Candida albicans* show differences in virulence, virulence remains stable by culture at 37° C. and weekly to monthly subculturing, but may be depressed in cultures kept in cold storage.

b. Schwarz (J.), **The Dog as an index of endemicity of mycoses.** In one group of 100 dogs 20%, and in another of 132 stray dogs 39·1%, in Cincinnati, Ohio, where histoplasmosis is endemic, were found by morphological and cultural techniques to be carrying *Histoplasma capsulatum* [cf. **4**, No. 704]. In Tucson, Ariz., where coccidioidomycosis [*Coccidioides immitis*] is endemic, 26% of 194 dogs were positive.

c. Emmons (C. W.), **Isolation of Histoplasma capsulatum from soil in Washington, D.C.,** records the isolation of *H. capsulatum* from urban areas in 10 of 10 specimens of soil from a small park having roosting sites of starlings [**4**, No. 703] and from 1 of 5 other soil samples.

d. Salvin (S. B.) & Smith (R. F.), **Delayed hypersensitivity and cryptococcosis.** Delayed hypersensitivity developed in guinea-pigs after sensitization with minute quantities of highly purified soluble protein from *Cryptococcus neoformans*. It was

concluded that the specificity of the delayed sensitivity is directed towards the basic portions of the antigen molecule and that it may be an intermediate phase in the development of circulating antibody. *C. neoformans* polysaccharide, probably a hapten, is not active in inducing or detecting delayed hypersensitivity.

609. e. Huppert (M.), **Role of hypersensitivity in pathogenesis of coccidioidomycosis.** Observations indicate that 99% of clinical non-disseminated [*Coccidioides immitis*] infections, but only 30% of disseminated cases, give a positive skin test. In disseminated cases with a positive skin test there is a survival rate of 75% against a survival rate of 20% for cases in which the skin test is negative.

f. Louria (D. B.), **The pathogenesis of experimental infections due to Cryptococcus and Candida.** Experiments with mice showed defence mechanisms against *Cryptococcus neoformans* infection to be good, immunization with small inocula of living cells affording protection against a lethal dose, and the evidence suggests that the defences are antibody determined. For *Candida albicans* strs. of different virulence progressive disease is limited to the kidney. The more virulent strs. produced rapid death in the absence of multiplication, presumably by the production of toxins. They also show an ability to grow out of viable polymorphonuclear leucocytes following phagocytosis.

g. Hasenclever (H. F.) & Mitchell (W. O.), **Antigenic studies with Candida. III. Comparative pathogenicity of C. albicans group A, group B, and C. stellatoidea.** Tests showed *C. albicans* groups A and B to be equally virulent for mice and *C. stellatoidea* to be in general less virulent than *C. albicans*. All 5 strs. of group B tested in rabbits were more virulent than any of 4 strs. of *C. stellatoidea*.

h. Roth (F. J.), **Inhibition of growth of pathogenic yeasts in human serum.** All *Candida* spp. are inhibited in some degree by human serum [**4**, No. 681], *C. albicans* the least. This is not dependent on antibodies or carbohydrate conc. or the presence of various N sources and is only moderately affected by dialysis. Serum is, however, inactivated by heating at 60° C. for 1–2 hr.

610. Rieth (H.) & Schoderer (K.). **Die Mykosen: Entstehung, Erkennung und Behandlung von Pilzerkrankungen.** [Mycoses: origin, recognition and treatment of fungal diseases.] –*Folia ichthyol.* 6, 44 pp., 12 fig., 2nd revised ed., [?] 1961. [Received July 1961.]

This is an enlarged version of **3**, No. 473.

611. Riddell (R. W.). **Calling the laboratory. XX. Fungus infections.**—*Practitioner*, **187**, 1118, pp. 231–235, 1961.

Brief notes are given on the principal mycotic infections seen in Britain under the headings of keratin, subcutaneous, and pulmonary infections.

612. Ciferri (R.). **An essay on the classification of the moniliaceous medical fungi.**—*Mycopathologia*, **14**, 3, pp. 161–172, 1961.

From Pavia Univ., Italy, the author proposes, on the basis of the types of spores produced and the morphology of the parasitic and saprophytic phases, to group the principal fungi pathogenic for man and animals in 15 families. Each family is typified and a key to families is provided.

613. **Mykologiai laboratórium.** [Mycological laboratory.]—*Orsz. Közegész. Int. Mük., 1959*, pp. 80–83, 1 fig., 1961.

It is reported from the Mycol. Lab., State Inst. of Hyg., Budapest, Hungary, that the 2 most frequently cultured spp. in 1959 were *Candida albicans* (117 times) and *Actinomyces bovis* (18 times). *Cryptococcus neoformans* was isolated on 1 occasion.

614. Passos (G. da M.). **Processos carióticos micóticos : técnicas de defesa.** [Mycotic cariotic processes: techniques of control.]—Thesis, Fac. Odont., Univ. Recife, 187 pp., 1961. [Engl., Germ. summ. 82 ref.]

Yeasts were found to occur in the decayed teeth of 128 (25·6%) of 500 patients examined in Recife. *Candida* spp. were most frequently isolated and included *C. albicans* (9·6%), *C. guilliermondii* (4·8), *C. krusei* (3·2), *C. parapsilosis* (2·6), *C. tropicalis* (2·0), *C. intermedia* (0·6), and *C. robusta* (0·2). Other fungi isolated were *Trichosporon cutaneum* (0·6), *Torulopsis famata* (0·4), and *T. glabrata*, *T. stellata*, *Rhodotorula mucilaginosa*, *R. flava*, *Cryptococcus laurentii*, *C. albidus*, *Aureobasidium* [*Pullularia*] *pullulans*, and *Geotrichum candidum* (all 0·2).

Of 39 cariotic cavities positive for fungi, 33% were still positive after removal of the carious tissue, and histological sections of some teeth showed fungi in the dental canaliculus.

In vitro zinc oxide-eugenol had greater antibiotic qualities than the other dental cements tested. Mycostatin [nystatin] and cabimycin [trichomycin] were effective against the yeasts and are recommended, in combination with the antibacterial substances ledermycin and tetrex, for use against mixed infections.

615. Batista (A. C.), Passos (G. M.), & Charifker (M.). **Um caso de parodontite micotica.** [A case of mycotic parodontitis.]—*Publ. Inst. Micol. Univ. Recife* 303, 16 pp., 5 fig., 1961. [Engl., Germ. summ.]

A case of mycotic parodontitis in a 45-yr.-old man, which was affecting the patient's health, is described. *Torulopsis glabrata* (but no bacteria) was isolated from extracted teeth and also from the urine. Therapy with trichomycin (cabimex) (4 tablets daily for 6 days) was successful and the yeast was no longer found in the urine.

616. Saëz (H. E.). **Recherches sur la flore levuriforme intestinale de l'Enfant sain.** [Researches on the intestinal yeast-like flora of the healthy Child.]—*Rev. Mycol., Paris*, **26**, 1, pp. 34–39, 1961.

Studies at the Lab. de Parasitologie de Lyon and the Muséum National d'Histoire Naturelle, Paris, on the yeasts present in 33 faeces specimens from 25 healthy children of both sexes, aged 3 months–3 yr. gave 28 strs. of yeasts and 27 other fungi. The organisms identified specifically were *Rhodotorula glutinis*, *Candida intermedia*, *C. rugosa*, *C. albicans*, *C. brumptii*, *C. guilliermondii*, *C. pelliculosa*, *C. zeylanoides*, *Trichosporon cutaneum*, *C. curvata*, *C. melinii*, and *Geotrichum candidum*. *Penicillium* sp. and *Mucor* sp. were also isolated.

Direct examination of the faeces failed to reveal the presence of mycelial threads, though these were found in faeces of other children of the same age suspected of moniliasis.

617. Van Uden (N.), Do carmo Sousa (Lidia), & Farinha (Manuela). **On the intestinal yeast flora of Horses, Sheep, Goats and Swine.**—*J. gen. Microbiol.*, **19**, 3, pp. 435–445, 1958. [26 ref.]

From the caeca of 252 horses, 503 sheep, 250 goats, and 250 swine, sampled at an abattoir in Lisbon, yeasts belonging to 28 spp. and 1 var. were isolated at Dept Microbiol., Bot. Inst., Univ. Lisbon [**3**, Nos. 99, 452]. The distribution of yeasts of any species and of *Candida albicans* respectively was: horses, 52·4%, 4·4%; sheep, 6·8, 4·2; goats, 6·4, 0·8; swine, 88·8, 9·2. The most frequent occurrences for single species were *C. slooffii* in swine (48·4%), *Trichosporon cutaneum* in horses (21·8), and *Saccharomyces tellustris* (*C. bovina*) in swine (14). *Cryptococcus neoformans* was isolated once from a healthy horse [**3**, No. 896].

618. Carmichael (J. W.). **Fungi from Alberta Rodents.**—*Mycopathologia*, **14**, 2, pp. 129–135, 1961.

Writing from Univ. Alberta, Edmonton, the author summarizes the results of rodent

surveys during 1946–59 in Alberta (most of the Southern half, and the Peace River and Fort Vermilion areas). Infection by *Emmonsia parva* [**3**, No. 1058], 5·1% in 1946, was only 3·3% in 1957 and under 1% thereafter. It became evident that a characteristic mould flora was present in the lungs of Alberta rodents. *Beauveria bassiana*, *Penicillium* spp., and *Aspergillus* spp. predominated, while *Cladosporium* spp. and *Scopulariopsis brevicaulis* were common, but not confined to the lungs; *Chrysosporium pannorum* was found in the lungs and spleen (4 and 2 animals, respectively). *Trichophyton mentagrophytes* was isolated from the lungs and spleen of *Peromyscus manifulatus* (3 animals), an unidentified *T.* (isolated also from local soil) from the lung of *Citellus richardsoni*, *T.* sp. (probably *T. mentagrophytes*) from the liver of *P. maniculatus*, and *T. mentagrophytes* from that of a mouse. *Phycomyces blakesleeanus* was obtained from the lungs of *P. maniculatus* in 2 places approximately 58° N.

619. Jacks (H.). **A note on fungi isolated from plants.**—*N.Z. J. agric. Res.*, **3**, 2, pp. 250–252, 1960.

The incidence of the main fungus genera on grasses, legumes, and weeds is given from Massey agric. Coll., Palmerston North, N.Z. The fungi previously isolated (H. Jacks, *N.Z. J. agric. Res.*, **2**, p. 152, 1959) from stained wool [**3**, Nos. 666, 995] gave 43% of the total (*Aspergillus* 3, *Chaetomium* 7, *Epicoccum* 13, *Macrosporium* 1, *Phoma* 3, *Stemphylium* 16%). This confirms the suggestion that wool could be stained while sheep are resting and conditions are favourable for the prolific growth of the fungi.

620. Janke (R. G.), Jungwirth (C.), Dawid (I. B.), & Hoffmann-Ostenhof (O.). **Oxidative degradation of myo-inositol by some fungi.**—*Monatsch.*, **90**, pp. 382–388, 1959. [*Chem. Abstr.*, **55**, 15, col. 14573d, 1961.]

Of 36 spp. examined at Univ. Vienna, Austria, only *Schwanniomyces occidentalis*, *Cryptococcus neoformans*, and *Candida krusei* oxidized myo-inositol.

621. Coulet (M.) & Merland (Anne-Marie). **Nouvelles recherches d'hémagglutinines chez les mycètes.** [New research on haemagglutinins in fungi.]—*C.R. Soc. Biol., Paris*, **154**, 12, pp. 2293–2296, 1960.

A report from Fac. Med. Pharm., Clermont-Ferrand, France, on 96 spp. [mostly large basidiomycetes] tested. No relation was noticed between agglutination intensity and systematic position.

622. Keddie (Frances), Orr (Antoinette), & Liebes (Dorothy). **Direct staining on vinyl plastic tape, demonstration of the cutaneous flora of the epidermis by the strip method.**—*Sabouraudia*, **1**, 2, pp. 108–111, 1 col. pl., 1961. [Fr. summ.]

At Div. Derm., Dept Med., Univ. Calif. med. Center, Los Angeles, adhesive vinyl plastic tapes have been found more durable and resistant to moisture and chemicals than those with a cellophane backing, and are recommended for use in stripping and staining for fungal infection of the horny epidermis. Details of P.A.S., Gram, Giemsa, and fluorescent acridine orange staining procedures are given and illustrated with strippings of scales infected by *Malassezia furfur*. Rapid staining techniques for immediate diagnosis are also described.

623. Collins (A. P.). **Alkylenebis (dithiocarbamate) esters and fungicides therefrom.**—Patent (to State Univ. Iowa), *U.S. 2,974,082*, Mar. 7, 1961. [Abs. in *Chem. Abstr.*, **55**, 13, col. 12754e, 1961.]

The compounds tested included, *inter alia*, $EtOCOCH_2$; $MeCOCH_2$; $OHCCH_2$; polyethylene glycol 210, oil; and 410, oil; $CH_2{:}C(Me)CH_2$; *p*-$ClC_6H_4CH_2$; 2,4-$(Cl)_2C_6H_3CH_2$; 3,4-$(Cl)_2C_6H_3CH_2$; $PhCH_2$, oil; $MeCOCH_2$; and $EtOCOCH_2$. These

compounds inhibited the growth of *Microsporum lanosum* [*M. canis*], *M. audouinii*, *M. gypseum*, *Achorion* [*Trichophyton*] *schoenleinii* and *T. rubrum* to about the same extent as undecylenic acid.

624. Fragner (P.) & Kvita (V.). **Mycostatic effect of several quinoline derivatives.** —*Čsl. Derm.*, **31**, pp. 220–222, 1956. [Abs. in *Chem. Abstr.*, **55**, 12, 11540d, 1961.]

8-quinolinol-HCl and 8-quinolinol-$KHSO_4$ were effective fungistatic agents against *Candida albicans* at 1:50,000–100,000, and fungicidal at 1:160.

625. Ishida (S.), Senfu (M.), Matsuda (A.), Kawamura (Y.), & Yamanaka (K.). **Antifungal agent. IV. Antibacterial and antifungal activities of α, β-unsaturated compounds.**—Senfu (M.), Matsuda (A.), Ishida (S.), Kawamura (Y.), & Yamanaka (K.). **V. Antibacterial and antifungal activities of β-nitrostyrene derivatives.**—Senfu (M.), Matsuda (A.), Kawamura (Y.), & Yamanaka (K.). **VI. Antibacterial and antifungal activities of heterocyclic nitroethylene derivatives.**—*Chemotherapy* (*Tokyo*), **8**, pp. 250–251; 252–257; 258–260, 1960. [*Chem. Abstr.*, **55**, 15, col. 14580b–g, 1961.]

In further studies [**4**, No. 236] the effect of the compounds of the type PhCHC:HX decreased for X being NO_2, COMe, SO_2Ph, CN, and COOH. The test organisms included bacteria (Gram + and −), *Trichophyton mentagrophytes*, *Candida albicans*, *Willia* (*Hansenula*) *anomala*, *Torula* [*C.*] *utilis*, and *Penicillium chrysogenum*.

Papers V and VI deal with further studies, the latter noting that compounds with furan, pyridine, or pyrimidine groups were inferior, and those with thiophene, naphthalene, or thiazole groups superior, to compounds with a benzene group. These compounds showed generally higher activities against fungi, particularly *T. mentagrophytes*, than against bacteria.

626. Lawrence (C. A.). **The in vitro effects of several germicides upon pathogenic dermatophytes (fungi) and a variety of bacteria.**—*Amer. J. hosp. Pharm.*, **17**, pp. 684–687, 1960. [8 ref.]

At Dept. infect. Diseases, Univ. Calif. med. Center, Los Angeles, the *in vitro* activity against some dermatophytes and bacteria of virac (a stable quaternary ammonium iodophor) was compared with that of betadine (an iodine solution complexed with polyvinylpyrrolidone), zephiran (a quaternary ammonium surface-active agent), and furacin (a nitrofuran).

The iodine in virac was highly stable and this compound was far superior to betadine in fungistatic and fungicidal activity. Based on the quaternary content of virac and zephiran these compounds gave comparable activities. Furacin has the lowest degree of activity.

627. Sidhu (G. S.), Sattur (P. B.), & Hasan (Salma J.). **Synthesis and fungicidal activity of some arylnitroalkenes.**—*J. sci. industr. Res.*, **19** C, 2, pp. 38–39, 1960.

At the Regional Res. Lab., Hyderabad, India, 2-iodo-3-methoxy- and 2-nitro-4-methyl-β-nitro-styrenes were toxic to *Aspergillus niger* on Sabouraud's medium (pH 6–7) at 30–35° C. in a dilution of 1:100,000 acetone solution.

628. Kravetz (H. M.), Andriole (V. T.), Huber (Margret A.), & Utz (J. P.). **Oral administration of solubilized amphotericin B.**—*New Engl. J. Med.*, **265**, 4, pp. 183–184, 1961.

It is reported from National Inst. of Health that in 9 patients (8 with severe mycotic infection) given 100 mg./kg./day of solubilized amphotericin by mouth or nasogastric or duodenal tube the reactions were so severe as to preclude this route of

administration. It is suggested that the intolerance was due to the sodium desoxycholate used as solubilizing agent.

629. Drouhet (E.). **Action de l'amphotéricine B dans les mycoses profondes. Étude mycologique, clinique et thérapeutique de 15 observations.** [The action of amphotericin B in deep-seated mycoses. A morphological, clinical, and therapeutic study of 15 cases.]—*Sem. Hôp., Paris*, **37**, 2, pp. 101–121, 7 fig., 1 graph, 1961. [70 ref.]

In this report, presented to the Société Française de Mycologie Médicale on 8 Apr. 1960, the author gives details of the data obtained in laboratory studies and describes the results of therapeutic applications of amphotericin B, comparing his observations with those of other workers. It is concluded that amphotericin B inhibits the growth of *Candida albicans*, *C. tropicalis*, *Cryptococcus neoformans*, *Histoplasma capsulatum*, *Coccidioides immitis*, *Blastomyces dermatitidis*, *Aspergillus fumigatus*, *Cladosporium trichoides*, and *Madurella mycetomi* at a min. dosage of 0·03–3·12 μg./ml. Oral administration was not followed by toxicity symptoms. Absorption via the gastro-intestinal route in animals gave striking results in the treatment of cryptococcosis, histoplasmosis, blastomycosis, aspergillosis, coccidioidomycosis, and moniliasis. Favourable results followed oral administration in a case of African histoplasmosis with multiple osseous gummae (*H. capsulatum* var. *duboisii* [*H. duboisii*]), in a case of generalized moniliasis with arthritis, due to *C. albicans*, and in 8 cases of thrush with digestive, urinary, or bronchitic complications.

Administered intravenously, amphotericin B cured a case of septicaemia due to *C. albicans* and 3 cases of generalized moniliasis (*C. albicans*), 2 with chronic granulomatous lesions. It temporarily improved a case of malignant endocarditis (*C. tropicalis*), one of meningeal and visceral cryptococcosis (*Cryptococcus neoformans*), pulmonary histoplasmosis (*Histoplasma capsulatum* and *Candida* sp.), and an inoperable case of aspergillosis (*Aspergillus fumigatus*) of both lungs. Slow perfusions should be carried out every other day, dosage gradually increasing from 0·2 mg./kg. to not more than 1–1·5 mg./kg.

630. Smith (D. E.) & Matthews (J. H.). **Treatment of pulmonary mycotic infections with amphotericin B.**—*New Engl. J. Med.*, **263**, 16, pp. 782–784, 1960. [8 ref.]

Details are given of administration and dosage of amphotericin B given intravenously, at Veterans Administration Hosp., Oteen, N. Carol., to 12 patients with pulmonary infection by *Blastomyces dermatitidis* (5) [**4**, No. 672], *Histoplasma capsulatum* (4) or *Coccidioides immitis* (3). All patients showed toxic reactions which were minimized by the concomitant use of antipyretic and antihistaminic drugs; treatment was stopped prematurely in 1 patient with pre-existing renal disease, who died later of respiratory failure. Ten patients were apparently cured, and in the 11th the disease was controlled with the addition of pulmonary resection.

631. Glaz (E. T.), Schreiber (Eszter), Gyimesi (J.), Horváth (I.), Steczek (Katalin), Szentirmai (A.), & Bohus (G.). **A new trichothecin-like antifungal antibiotic.**—*Nature, Lond.*, **184**, 4690, p. 908, 1 fig., 1959.

A combined report from Dept Pharmacol., Univ. med. Sch., Budapest, and other centres, on 'antibiotic-T' found during a screening of basidiomycetes for antibiotic effects. The substance was similar chemically and biologically to trichothecin [**2**, No. 1433] and was fungistatic for several pathogenic fungi: LD_{50} for mice was 810 mg./kg. intraperitoneally and more than 1000 mg./kg. by mouth. Antibiotic-T was effective in reducing the numbers of yeasts in the faeces of mice on a diet containing terramycin.

632. Rieth (H.). **Antimykotica — unter besonderer Berücksichtigung des Griseofulvins.** [Antimycotics—with special reference to griseofulvin.]—*Hautarzt*, **12**, 5, pp. 193–200, 7 fig.; 6, pp. 242–249, 1961. [5 pp. ref.]

A well-documented review of griseofulvin, trichomycin, and, in the 2nd part, amphotericin B, penicillin, streptomycin, tetracycline, etc.

633. Anjaneyulu (R.), Apte (P. P.), & Padhye (A. A.). **Hamycin in the treatment of vaginal moniliasis. (Preliminary observations).**—Reprinted from *J. Obstet. Gynaec. India*, **11**, 3, 2 pp., 1961.

At the Sassoon Hosp., Poona, India, of 35 cases of vaginal moniliasis (*Candida albicans*, 29; *C. tropicalis*, 5; *C. pseudotropicalis*, 1) treated with 1% hamycin (an antibiotic from *Streptomyces pimprina* from soil) glycerol suspension 28 showed symptomatic cure in 8–10 days and all in 15; 28 cases were mycologically negative in 12–15 days.

634. Atre (W. G.), Wakankar (P. S.), & Padhye (A. A.). **Hamycin in the treatment of otomycosis. (Preliminary observations).**—*Hindustan Antibiot. Bull.*, **3**, 4, pp. 172–173, 1961.

At Sassoon Hosps., Poona, India, 25 cases of otomycosis (18 *Aspergillus niger*, 2 *A. glaucus* of 23 cultured) were treated with 1% hamycin glycerol suspension. Clinicure was observed after 7–9 days' treatment in 16 cases and after 10–14 in the other 9. There were no side effects.

635. Soerensen (B.) & Saliba (A. M.). **Actinomicose espontânea em Coelhos.** [Spontaneous actinomycosis in Rabbits.]—*O. Biologico*, **27**, 6, pp. 131–134, 5 fig., 1961. [Engl. summ.]

From São Paulo Univ., 3 cases of actinomycosis in laboratory rabbits at Inst. Butantan are described as a new record for Brazil. The anaerobic actinomycete cultured is referred to *Actinomyces* but is not specified.

636. Küster (E.). **Results of a comparative study of criteria used in the classification of the actinomycetes.**—*Intern. Bull. bact. Nomen. Tax.*, **11**, 3, pp. 91–98, 1961.

Results of this study [cf. **3**, Nos. 807, 956] showed the morphology of sporophores, spore-shape, and the melanin reaction to be reliable taxonomic characters. Mycelial colour is of less value.

637. Bedryńska-Dobek (M.). **Étude comparative entre les souches du genre Actinobacterium, Actinomyces bovis et Nocardia asteroides.** [A comparative study of the strains of the genus *Actinobacterium*, *Actinomyces bovis*, and *N. asteroides*.]—*Acta microbiol. polon.*, **9**, 4, pp. 331–341, 1960. [Pol. summ. 19 ref.]

The results of studies at the Inst. Pasteur, Paris, on 8 strs. of *Actinobacterium* [*Actinomyces*] (including 1 of *A. israelii*), 2 of *Actinomyces bovis*, and 9 of *N. asteroides*, covering morphological, physiological, and cultural characters, proteolytic ability, utilization of glucides, biochemical characters, and reaction to antibiotics are described and tabulated.

638. Bedryńska-Dobek (M.). **Détermination des caractères morphologiques, culturaux et biochimiques, du pouvoir pathogène et de la résistance aux antibiotiques de 9 souches d'Actinobacterium et 2 d'Actinomyces bovis après la lyophilisation.** [Determination of the morphological, cultural, and biochemical characters, pathogenicity, and resistance to antibiotics of 9 strains of *Actino-*

bacterium and 2 of *Actinomyces bovis* after lyophilization.] —*Acta microbiol. polon.*, **9**, 3, pp. 261–267, 1960. [Pol. summ. 9 ref.]

The results are presented of studies at Inst. Pasteur, Paris, on 3 strs. of *Actinobacterium* [*Actinomyces*] *israelii*, 2 of *A. abscessum*, 1 of *A. cellulitis*, 1 of *A. liquefaciens*, and 1 of *A. negeri*, in comparison with 2 of *Actinomyces bovis*. No str. was penicillin-resistant but almost all remained unaffected by streptomycin, neomycin, and pamycetin.

639. Welsh (J. D.), Rhoades (E. R.), & Jaques (W.). **Disseminated nocardiosis involving spinal cord. Case report.** —*Arch. intern. Med.*, **108**, 1, pp. 73–79, 4 fig., 1961. [41 ref.]

A fatal case of *Nocardia asteroides* infection involving the lung, brain, subcutaneous tissues, and also the spinal cord, of a 38-yr.-old white woman, is reported from Dept Internal Med., and Dept Path., Oklahoma Univ. med. Center, Oklahoma City.

640. Whitmore (D. N.). Gresham (G. A.), & Grayson (M. J.). **Nocardiosis in anaemic patients given steroids.**—*J. clin. Path.*, **14**, 3, pp. 259–263, 3 fig., 1961. [14 ref.]

Two fatal cases in men of *Nocardia asteroides* infection are recorded from Dept Path., Cambridge Univ. and Addenbrooke's Hosp., Cambridge. The 1st, a retired hedger (73 yr.), was admitted to hospital with a 9 months' history of jaundice and fatigue and died 8 months later after developing painful swellings of the left groin and shoulder; the 2nd, a retired insurance manager, had an 18 months' history of spontaneous bruising and after 2 yr. treatment as an outpatient for myelofibrosis returned to hospital with a painful swelling of the left buttock and died a month later. Both received prednisone treatment. *N. asteroides* was isolated from the abscesses of both patients and proved highly pathogenic for rabbits.

641. Bedryńska-Dobek (M.). **Détermination des caractères morphologiques, culturaux et biochimiques, du pouvoir pathogène et de la résistance aux antibiotiques de 9 souches de Nocardia asteroides.** [Determination of the morphological, cultural, and biochemical characters, pathogenicity, and resistance to antibiotics of 9 strains of *N. asteroides*.]—*Acta microbiol. Polon.*, **9**, 4, pp. 343–353, 1960. [Pol. summ. 9 ref.]

In studies at the Acad. Med., Poznań, the strs. were found to be strictly aerobic, active catalase-formers, weakly heat-resistant, and very long-lived. Their proteolytic ability was nil. Utilization of glucides was mostly good, except for galactose. The strs., in general, were not very active biochemically. Pathogenicity to mice varied with the str. Susceptibility to antibiotics was low.

642. McClung (N. M.). **Isolation of Nocardia asteroides from soils.**—*Mycologia*, **52** (1960), 1, pp. 154–156, 1961.

At Dept Bact., Univ. Ga, Athens, Ga, by means of a paraffin baiting technique, *N. asteroides* was isolated 48 times and unidentified *Nocardia* spp. 16 times from 102 soil samples from Arizona, Virginia, W. Virginia, and Texas. No correlation was established between the numbers of isolates and the location, composition, and water content of the soil samples.

643. Dean (D. J.), Gordon (M. A.), Severinghaus (C. W.), Kroll (E. T.), & Reilly (J. R.). **Streptothricosis : a new zoonotic disease.**—*N.Y. St. J. Med.*, **61**, 8, pp. 1283–1287, 4 fig., 1961.

Dermatophilus sp. was isolated at Div. of Labs. & Res., State of N.Y. Dept Health [**4**, No. 604], from a 5½-month-old male deer taken in Crawford, N.Y., and from 2 of 4 persons who developed furunculosis on the dorsal surface of the hands after

handling the deer. These are believed to be the 1st cases of streptothricosis in man. No cases developed among the household contacts of the infected persons. Isolates of the fungus from man and the deer produced lesions in several spp. of experimental animals.

644. English (Mary P.). **An outbreak of equine ringworm due to Trichophyton equinum.**—*Vet. Rec.*, **73**, 23, pp. 578–580, 1961.

A report from Bristol Royal Hosp. of an outbreak of ringworm due to *T. equinum* which started when an apparently healthy horse was introduced into stables and 7 days later showed signs of infection. Of the 18 other horses in the stables 17 eventually became infected, as did 3 of animals at grass with which the stabled animals came into contact. Of the 7 human contacts 4 became infected. Aspects of the epidemiology and treatment of the disease are discussed.

645. Kaplan (W.) & Ivens (M. Sue). **Observations on the seasonal variations in incidence of ringworm in Dogs and Cats in the United States.**—*Sabouraudia*, **1**, 2, pp. 91–102, 3 fig., 1961. [Germ. summ. 21 ref.]

At Communicable Disease Center, Atlanta, Ga, during the course of a survey of animal ringworm in U.S.A. [**2**, No. 2328], from Oct. 1955–Feb. 1959 specimens from 3914 dogs and 1232 cats from 35 states were examined. *Microsporum canis* was isolated from 501 dogs and 363 cats. There was a marked seasonal incidence in dogs, the highest rates of infection occurring during Oct.–Feb., but in cats there was little monthly variation. There was a progressive decline each year of *M. canis* infection in both animals.

M. gypseum was isolated from 191 dogs. The rate of infection in southern states was twice that in northern states, and was highest in July–Nov. There was a sharp drop during Dec.–June. Only 6 cases of *M. gypseum* in cats were found and these occurred during the peak period for dogs. *Trichophyton mentagrophytes* was isolated from 83 dogs at all seasons, with peaks in Nov. and Dec., and from 10 cats.

646. Bénard (P.), Drouhet (E.), Nadal (C.), & René-Corail (L.). **Favus cutané généralisé avec atteintes dermo-hypodermiques et lympho-ganglionnaires, traitées par la griséofulvine.** [Generalized cutaneous favus with dermo-hypodermic and lympho-ganglionary attacks treated with griseofulvin.]—*Sem. Hôp. Paris*, **37**, 2, pp. 133–139, 6 fig., 1961.

From l'Hôpital Franco-Musulman, Bobigny, Seine, and Inst. Pasteur, Paris, the authors report studies on a case, accompanied by favic granulomata and adenopathya, of 10 yr. standing in a 27-yr.-old Algerian man. The causal organism was identified as *Trichophyton faviforme* (*verrucosum*) [*T. verrucosum*]. Complete cure was achieved (both of the cutaneous and of the lympho-ganglionary lesions) by the administration over a period of 9 months of a total dosage of 320 g. of griseofulvin, the patient's tolerance of which was perfect.

647. Katzenellenbogen (I.) & Sandbank (M.). **[The treatment of tinea capitis and dermatomycosis with griseofulvin. Follow up of 65 cases.]**—*Harefuah*, **60**, 4, pp. 111–114, 6 fig., 1961. [Hebrew. Engl. summ., pp. 114–115. *B.H.*, **36**, p. 546, 1961.]

These cases in Israel successfully treated with griseofulvin included 19 of tinea capitis, 32 of tinea corporis, and 30 of onychomycosis; the fungi involved being *Trichophyton violaceum*, *T. schoenleinii*, *T. rubrum*, *T. tonsurans*, and *Microsporum ferrugineum*.

648. Miguens (M. Pereiro). **El tratamiento de las micosis superficiales con griseofulvina.** [The treatment of superficial mycoses with griseofulvin.]—

Arch. Inst. Farmacol. exp., Salamanca, **12**, 2, pp. 171–204, 31 fig., 1960. [32 ref.]

A review and a report of 10 Spanish cases (*Microsporum canis* (6), *Trichophyton schoenleinii* (2), *T. rubrum* (1), *M. gypseum* (1)).

649. Michaelides (P.), Rosenthal (S. A.), Sulzberger (Marion B.), & Witten (V. H.). **Trichophyton tonsurans infection resistant to griseofulvin.**—*Arch. Derm., Chicago*, **83**, 6, pp. 988–990, 4 fig., 1961.

At Sect. Derm., med. Service, Veterans Administration Hosp., Manhattan, N.Y., a generalized *T. tonsurans* infection in a 33-yr.-old Negro failed to respond to griseofulvin therapy over a 6½-month period, even when the dose was increased to 6 g./day. The str. isolated from the case had a high *in vitro* resistance to griseofulvin.

650. Goldblatt (S.). **Severe reaction to griseofulvin. Sensitivity investigation.**—*Arch. Derm., Chicago*, **83**, 6, pp. 936–937, 1961.

At 199 William H. Taft Rd., Cincinnati, Prausnitz-Küstner antibodies to griseofulvin, and possibly minute quantities of antibodies to penicillin were demonstrated in the serum of a 30-yr.-old male who had reacted severely to griseofulvin [**4**, No. 273]. Cautious administration of griseofulvin resulted in an urticarial reaction which disappeared when the drug was withdrawn, but later griseofulvin therapy was resumed and continued for 6 months without side effects.

651. O'Sullivan (J. G.). **Griseofulvin treatment in experimental Microsporum canis infection in the Cat.**—*Sabouraudia*, **1**, 2, pp. 103–107, 12 fig., 1961. [Fr. summ.]

At Dept vet. Path., Univ. Glasgow, seven 5-week-old cats were experimentally infected with *M. canis*. After 12 days, when infection was established, 3 cats were treated with 60 mg./kg. griseofulvin orally per day [**3**, Nos. 1596, 1746; **4**, No. 473]. After 54 days 3 of the previously untreated animals were given 60 mg./kg. griseofulvin daily for 5 days, 10% griseofulvin in paraffin was rubbed into the affected areas for 23 days, and the hair was clipped at intervals. Of the group receiving oral treatment only, all were clinically normal after 15 days; fluorescence of the hair tips persisted for 78–113 days and cultures were positive for 106–127 days. The animals receiving oral and topical griseofulvin were clinically normal 12 days after treatment started; fluorescence persisted for 19–29 days and positive cultures for 43–64 days. The untreated control was clinically normal after 79 days but fluorescence and cultures were positive for the duration of the experiment (127 days).

652. Srivastava (O. P.) & Vora (V. C.). **Effect of griseofulvin on dermatophytes including totally isolated strains of Trichophyton rubrum and on Microsporum canis grown in keratin.**—*J. sci. indr. Res.*, **20**C, 6, pp. 163–165, 1961.

In experiments at the Central Drug Res. Inst., Lucknow, the sensitivity of *M. canis* to griseofulvin was similar when grown on Sabouraud's dextrose broth, with or without the addition of keratin.

653. Loewenthal (K.). **The antifungal effect of 70% ethyl alcohol. A laboratory study.**—*Arch. Derm., Chicago*, **83**, 5, pp. 803–805, 1961.

At Dept Med., State Univ. of N.Y. Coll. Med., New York, fluorescent scalp hairs from patients infected with *Microsporum audouinii* were immersed in 70% ethyl alcohol for 1 min.–3 hr., washed in 2 changes of sterile saline, dried, and plated on Sabouraud's dextrose agar. The growth of *M. audouinii* from the treated hairs was retarded or completely inhibited in direct proportion to the time of exposure to alcohol. Exposure for 1–2 min. inhibited the fungus in 40% of treated hairs.

654. Dawson (Christine O.) & Gentles (J. C.). **Addendum to 'The perfect states of Keratinomyces ajelloi Vanbreuseghem, Trichophyton terrestre Durie & Frey and Microsporum nanum Fuentes'.**—*Sabouraudia*, **1**, 2, p. 123, 1961.

The authors designate the type specimens of *Arthroderma uncinatum*, *A. quadrifidum*, and *Nannizzia obtusa* [**4**, No. 303]—publication of these names therefore dates, for purposes of priority, from this addendum.

655. Rippon (J. W.) & Scherr (G. H.). **Induced dimorphism in dermatophytes.**—*Mycologia*, **51** (1959), 6, pp. 902–914, 8 fig., 1961. [31 ref.]

A detailed account of information already noticed [**3**, No. 1893].

656. Bistis (G. N.). **Pleomorphism and growth cycles in Trichophyton mentagrophytes.**—*Mycologia*, **52** (1960), 3, pp. 394–409, 7 fig., 1961. [22 ref.]

From Columbia Univ., New York, evidence is presented in support of the hypothesis that the selection factor responsible for the expression of pleomorphic variants in *T. mentagrophytes* [**3**, No. 1614] is their ability to grow in areas already occupied by the parent mycelium. Neopeptone-dextrose agar plates were inoculated with spore suspensions of a normal non-pleomorphic (N) str. and when growth had reached the stationary phase the aerial mycelium was scraped off, sterile cellulose membranes were placed on the surface of the agar and inoculated with the N. str. and 2 of its pleomorphic (P) variants. The N str. grew very sparsely; growth of the P strs. was greater and increased with the degree of pleomorphism, as indicated by conidial production. The growth (as dry wt.) of the 3 strs. on neopeptone-dextrose and casein-dextrose agars also increased with pleomorphism.

657. Raubitschek (F.). **Mechanical versus chemical keratolysis by dermatophytes.**—*Sabouraudia*, **1**, 2, pp. 87–90, 1961. [Fr. summ. 22 ref.]

At Lab. med. Myc., Hadassah Univ. Hosp., Jerusalem, Israel, *Trichophyton mentagrophytes* grew in an aqueous extract of healthy human fingernail, obtained by cleansing the nail and shaking it in water for 1 week. Similarly, when human hair was shaken in water for 2 hr. the resultant extract supported the growth of *T. mentagrophytes*, *T. rubrum*, and *T. tonsurans*. It is suggested that dermatophytes in disease may attack only non-keratinous material, and disrupt the keratin structures they invade by mechanical force.

658. Hejtmánek (M.). **Příspěvek k fysiologii výživy Microsporum nanum Fuentes 1956.** [Contribution to the physiology of nutrition in *M. nanum*.]—*Čes. Mykol.*, **15**, 3, pp. 141–149, 10 fig., 1961.

At Univ. Olomouc, Czechoslovakia, assimilation of various N and C sources by *M. nanum* as measured by mycelium dry wt. gave the following descending orders: glutamic acid, casein hydrolysate, urea, asparagin, NH_4NO_3, $(NH_4)_2SO_4$, KNO_3; glucose, fructose, saccharose, mannite, inulin, raffinose, maltose, galactose, lactose, sorbitol, arabinose. The morphological characters of the colonies on the different media are tabulated.

659. Audette (R. C. S.), Baxter (R. M.), & Walker (G. C.). **A study of the lipid content of Trichophyton mentagrophytes.**—*Canad. J. Microbiol.*, **7**, 2, pp. 282–283, 1961.

The findings by the Fac. Pharm., Univ. Toronto, Ont., that palmitic, stearic, oleic, and linoleic acids between them constituted 97·2% of the sample confirmed the observation that fatty acids of *T. mentagrophytes* were predominantly long chain types [cf. **3**, No. 1619].

660. Zussman (R. A.), Vicher (E. E.), & Lyon (I.). **Nutritional and environmental factors affecting pigmentation in Trichophyton rubrum.**—*Mycopathologia*, **14**, 3, pp. 205–214, 1 graph, 1961.

From a study at Univ. Illinois Coll. Med., Chicago, it was concluded that pigment production in *T. rubrum* appears to be dependent on tyrosine and phenylalanine (as precursors), carbohydrate (primarily as an energy source), and O. Ascorbic acid at 0·01–0·25 g./l. somewhat inhibited growth, an effect not observed at 0·0025–0·01 g./l. Pigmentation was subnormal at both concs. and was suppressed by sunlight.

Cysteine and methionine inhibit the growth of *T. rubrum* (which is autoauxotrophic) on minimal medium, as does L-sorbose on both minimal and complete media.

661. Zussman (R. A.), Vicher (E. E.), & Lyon (I.). **The comparative morphology of the fungal mat and ball of Trichophyton rubrum.**—*Mycopathologia*, **14**, 3, pp. 198–204, 3 fig., 1961.

At Univ. Illinois Coll. Med., Chicago, a comparison was made (by sectioning freeze-dried material) of the structures of the mat of *T. rubrum* grown on solid agar and the spherical colony in a liquid shake culture. In the former the pigment was confined to a narrow zone towards the base of the mat, in the latter an outer, thin, compact and physically tough layer was highly pigmented. No reproductive structures developed in shake cultures.

662. Codner (R. C.), Cruickshank (C. N. D.), Trotter (M. D.), & Wood (S. R.). **The production of trichophytin antigen in submerged culture of Trichophyton mentagrophytes.**—*Sabouraudia*, **1**, 2, pp. 116–122, 5 fig., 1961. [Germ. summ.]

From the Med. Sch., Univ. Birmingham, and the M.R.C. Antibiotics Res. Sta., Clevedon, Somerset, a method is described for the production of large amounts of crude trichophytin by *T. mentagrophytes* in submerged culture. The crude material was sufficiently free from irritant properties to be used clinically. Two types of medium, M.P. (malt extract 4%, panmede 1%) and G.P.C. (glucose 4%, panmede 1%, acid hydrolysed casein 2%) were used. Cultures were harvested at 7 days, as by 11 days autolysis had set in, liberating toxic materials into the medium. Trichophytin was prepared by filtering off the mycelium, drying it with acetone, precipitating the filtrate with acetone, and extracting the resultant materials with ethylene glycol, dialysing and freeze-drying. The yield of trichophytin was about 70 mg./100 ml. medium. The 2 media gave closely similar results, though on G.P.C. there appeared to be less diffusion of active material from the mycelium; P.G.C. had the advantage of being dialysable and of containing no polysaccharides which might give false reactions in some individuals.

663. Burke (Ruth C.). **Tinea versicolor : susceptibility factors and experimental infection in human beings.**—*J. invest. Derm.*, **36**, 5, pp. 389–401, 6 fig., 1961. [26 ref.]

In a study of 47 patients with pityriasis versicolor (*Malassezia furfur*) at Sect. Derm., Dept Med., Yale Univ. Sch. Med., New Haven, Conn., 3 susceptibility factors were noted. These were: a genetic basis, infection having occurred in other members of the families of 8 (17%) of the patients; chronic illness, malnutrition and avitaminosis; and high endogenous or administered cortisol levels. Clinical infection was experimentally produced in 1, possibly 2, cases of Cushing's syndrome, in 1 patient on steroid therapy, and in 1 person with nutritional deficiency.

Evidence of a relationship between *M. furfur* and *Pityrosporum orbiculare* is presented.

664. Zimmerman (E. H.). **New therapeutic agent for tinea versicolor, 9-aminoacridinium 4-hexylresorcinolate.**—*J. Amer. med. Ass.*, **176**, 1, pp. 23–25, 1961.

It is reported from 23 Queen Street, Huntingdon, N.Y., that of 40 patients with pityriasis versicolor (*Malassezia furfur*) treated with the above compound as a lotion (2 mg./ml. in propylene glycol), a cream (2 mg./g. in a water washable base), or an aerosol (10 mg./150 g.) 38 cleared in 4–8 weeks. The treatment was unsuccessful against dermatophyte infections.

665. Mackinnon (J. E.). **Mycétomes.** [Mycetomas.]—Reprinted from *Encycl. med.-chir.*, 8123F[10], 2 pp., 1960.

Writing from Montevideo Univ., Uruguay, the author gives notes on the history, causal organisms, etiology, epidemiology, and pathological anatomy of mycetomas, followed by a clinical study and a brief account of diagnosis and of surgical and medical treatment.

666. Banerjee (A. K.). **Mycetoma.**—*Bull. Calcutta Sch. trop. Med.*, **7**, 1, p. 24, 1959.

A case report from Sch. trop. Med., Calcutta, on a 55-yr.-old male with multiple nodules and discharging sinuses on the left arm; *Nocardia asteroides* was isolated from the exudate. The condition improved following isonicotinic acid hydrazide and *p*-aminosalicylic acid therapy, but later recurred. Sulphadiazine therapy, now in progress, produced marked improvement.

667. Cockshott (W. P.) & Rankin (A. M.). **Medical treatment of mycetoma.**—*Lancet*, Nov. 19, pp. 1112–1114, 2 fig., 1960. [*T.D.B.*, **58**, p. 519.]

Long-term chemotherapy is recommended for the treatment of mycetomas, and it is suggested that surgery is justifiable only in early cases, particularly in superficial infections by *Madurella mycetomi*. At Univ. Coll. Hosp., Ibadan, 8 of 18 treated cases have responded to a preliminary course of wide-spectrum antibiotics to eradicate secondary infection and a prolonged course of dapsone (diaminodiphenylsulphone). Details are given of 3 cases, in adult males, infected by *Nocardia* sp., *Nocardia* (?) *brasiliensis* (diagnosed histologically), and 1 negative by culture and histological examination, and diagnosed by clinical symptoms only, respectively.

668. Bech (A. O.). **Diffuse bronchopulmonary aspergillosis.**—*Thorax*, **16**, 2, pp. 141–152, 10 fig., 1961. [34 ref.]

A detailed report from the Coventry & Warwickshire Hosp., Coventry, of 2 fatal cases of diffuse bronchopulmonary aspergillosis [cf. **3**, No. 1299 *et passim*] with suppurative pulmonary lesions in men—a car machinist (42) and a coal merchant (54). *Aspergillus fumigatus* was cultured from the 1st case and a fungus resembling *Aspergillus* was seen in sections of material at necropsy. It is thought that both cases started as bacterial infections and that in both massive and varied antibiotic treatment stimulated the growth of the fungus. Comparable cases reported in the literature are reviewed.

669. Salfelder (K.), Capretti (C.), Hartung (M.), & Moncada Reyes (F.). **2 casos poco comunes de aspergilosis pulmonar y pleural.** [Two uncommon cases of pulmonary and pleural aspergillosis.]—*Mycopathologia*, **14**, 2, pp. 78–92, 10 fig., 1961. [Engl. summ. 18 ref.]

From Univ. Los Andes, Mérida, Venezuela, the authors give a full report on a case of aspergillosis of the lung in a female patient aged 28 yr. A para-hilar cavity was found in a lobolus of the lung, which had been surgically removed. The cavity was connected with the bronchial system and contained an aspergilloma close to a sand

particle. Clinical symptoms (repeated haemoptosis) had been present for 18 yr. *A. fumigatus* was isolated from the affected part.

In the 2nd case (autopsy on a male patient, 50 yr. old) a confluent, bilateral broncho-pneumonia was recorded, with diffuse pulmonary mycosis (apparently *Aspergillus* sp.) secondarily disseminated over the pleura.

The paper concludes with a brief discussion of the classification of pulmonary aspergillosis.

670. Pecora (D. V.) & Toll (M. W.). **Pulmonary resection for localized aspergillosis.**—*New Engl. J. Med.*, **263**, 16, pp. 785–787, 1960. [33 ref.]

Details are given of 3 cases of pulmonary *Aspergillus* (unspecified) infection complicating tuberculosis (2) or silicosis (1), which were treated with resection at Ray Brook State Tuberculosis Hosp., N.Y., and the literature is reviewed. Surgery is considered the treatment of choice for localized pulmonary aspergillosis [**4**, Nos. 315–16].

671. Uehlinger (E.). **Tuberculose und Mykose.** [Tuberculosis and mycosis.]—*Schweiz. Z. Tuberc.*, **16**, 5, pp. 347–359, 8 fig., 1959. [Fr., Ital., Engl. summ.]

In this case in a 56-yr.-old patient reported from Zürich Univ., necrotic foci in various organs were found at post mortem to contain tubercle bacilli except in the lungs where they were destroyed by an *Aspergillus* infection diagnosed from Gridley-stained sections. No cultures were made.

672. Abernathy (R. S.) & Jansen (G. T.). **Therapy with amphotericin B in North American blastomycosis.**—*Ann. intern. Med.*, **53**, 6, pp. 1196–1203, 2 fig., 1960. [Interlingua summ. 14 ref.]

From Depts Med. & Derm., Univ. Arkansas med. Center, Little Rock, results are given of therapy with amphotericin B in 17 cases of *Blastomyces dermatitidis* infection [**3**, No. 1634; **4**, Nos. 100, 103, 630]. Toxic reactions were common and therapy was discontinued in 2 cases because of azotaemia. Of the 14 cases which responded rapidly to treatment, 2 later had recurrences, and 1 died of other causes.

673. London (R. G.) & Lawson (R. A.). **Systemic blastomycosis. Recurrent neurological relapse in a case treated with amphotericin B.**—*Ann. intern. Med.*, **55**, 1, pp. 139–147, 4 fig., 1961. [Interlingua summ. 13 ref.]

This is a report from the Southeast Kansas Tuberculosis Hosp., Chanite, of disseminated *Blastomyces dermatitidis* infection in a 67-yr.-old man treated by slow intravenous infusion of amphotericin B increasing from 0·1 mg./kg. to 1 mg./kg./day at the 7th day. The patient had two neurological relapses after which the drug was given intrathecally as well as intravenously but the intrathecal treatment was interrupted by the development of paraplegia. The treatment was successful.

674. **Studies on candidiasis in Japan.**—iv+199 pp., fig., Res. Committee of Candidiasis, Education Ministry of Japan, 1961.

This vol. includes papers by workers studying moniliasis in Japan under the auspices of the above-mentioned committee (Chairman I. Donomae, Osaka Univ. Sch. Med.). The 1st 3 papers deal with the incidence of moniliasis in Japan, the remainder with reports of research.

a. Donomae (I.), Takahashi (H.), & Tsubura (I.) (Osaka Univ. Hosp.), **Deep-seated candidiasis** (pp. 1–11, 19 tables), report the percentage incidence of generalized, respiratory, and digestive clinical forms of moniliasis to be 23·9, 61·2, and 14·9, respectively.

b. Higuchi (K.), Urabe (H.), & Toshitani (S.) (Kyushu Univ., Fukuoka),

Dermatological candidiasis. Statistical observations on moniliasis in the field of dermatology (pp. 12–18, 2 tables). Cutaneous moniliasis is rare in Japan, the av. incidence being 0·20% of out-patients.

674. c. Mizuno (S.) (Juntendo Univ.), **Vulvo-vaginal candidiasis. Survey of vulvo-vaginal candidiasis in Japan** (pp. 19–22, 4 tables). Data from 20 hospitals showed the overall incidence to be 2·2%. The incidence was higher in non-pregnant women (2·7) than pregnant (1·5) and decreased with age (–19 yr., 24·1; 60–69 yr., 6·7).

d. Fujino (T.), Miwatani (T.), Akagi (M.), Miyashita (S.), Takagi (S.), Kimura (K.), Kamiki (T.), Uemura (T.), & Ishigami (T.) (Osaka Univ.), **Studies on the genus Candida** (pp. 23–33, 14 fig.) deals with the nutrition of *Candida* and chlamydospore formation.

e. Tsuchiya (T.), Fukazawa (Y.), & Kawakita (S.) (Juntendo Univ., Tokyo), **Serological classification of the genus Candida** (pp. 34–46) [cf. **3**, Nos. 874, 1020].

f. Urabe (K.), Matsuo (Y.), Saito (H.), & Mito (T.) (Hiroshima Univ. Sch. Med.), **On the resistance of Candida albicans against trichomycin** (pp. 47–50).

g. Miura (O.) (Nihon Univ., Tokyo), **Studies on the biology of Candida albicans in reference to methods for discriminating its pathogenicity** (pp. 51–64). A report of attempts to correlate pathogenicity with thermal resistance and with the adsorption of gentian violet and other dyes.

h. Akiba (T.), Iwata (K.), & Inoue (S.) (Univ. Tokyo), **Studies on the serologic diagnosis of candidiasis** (pp. 65–77), report studies in which a polysaccharide fraction from *Candida albicans* proved to be an antigen of high specificity.

i. Kitamura (S.) (Nagasaki Univ. Sch. Med.), **Studies on the preparation of the antigen for diagnostic intradermal reaction, obtained from Canadida albicans on electric dissolution** (pp. 78–83, 3 fig.).

j. Miyake (M.), Akiba (T.), Okudaira (M.), & Inoue (S.) (Tokyo Univ.), **An immuno-pathologic study of deep-seated candidiasis, especially on the precipitin reaction using the infected tissue extract as antigen** (pp. 84–108, 18 fig.). Positive precipitin reactions by the method described are claimed to be relatively specific for candidiasis.

k. Mikamo (Y.) & Fukushima (K.) (Tokyo Univ. med. Sch.), **Studies on candidiasis** (pp. 109–114), deal with the antigenic structure of *Candida albicans* and the effect of anti-*Candida* drugs on O uptake.

l. Aoyama (S.) & Ata (S.) (Nagoya Univ.), **Studies on candidiasis** (pp. 115–121), deal with the effects of vitamin B, cortisone, and trichomycin on candidiasis in rats and mice.

m. Donomae (I.), Tsubura (E.), Kuroda (M.), & Takahashi (H.) (Osaka Univ. Sch. Med.), **Experimental studies on treatment of candidiasis** (pp. 122–144). Methods for evaluating anti-*Candida* drugs in experimental animals are given. Of compounds evaluated trichomycin, nystatin, amphotericin B and merzonin were the most effective.

n. Kubo (I.), Hori (M.), Niitani (H.), Yokoyama (I.), & Takemoto (T.) (Shiwa med. Coll.), **Studies on the pathogenesis of candidiasis** (pp. 145–152, 5 fig.). A study on the effect of cortisone or nitromin administration and generalized X-ray irradiation in systemic moniliasis in mice.

o. Kawamori (Y.), Kanai (J.), & Asahara (Y.) (Kumamoto Univ. med. Sch.), **The influence of Candida albicans on the detection of tubercle bacilli on culture media** (pp. 153–155). The addition of *C. albicans* to egg media facilitated the diagnosis of tubercle bacilli.

p. Kitamura (K.), Fukushiro (R.), Kagawa (S.), Nishiyama (S.), & Takahashi (H.) (Tokyo Univ. Sch. Med.), **Black hairy tongue. Report of eleven cases** (pp. 157–171, 19 fig.). The cases are described and the etiology is discussed. The condition is probably not mycotic.

q. Takahashi (Y.) & Kuroda (K.) (Tokyo and Juntendo Univs.), **Histopatho-**

logical studies on cutaneous candidiasis (pp. 172–175, 3 fig.) from a study of 29 cases. Histological changes were in general slight.

674. r. Higuchi (K.) & Iwasaki (H.) (Kyushu Univ., Fukuoka), **Systemic candidiasis complicated by leukaemia** (pp. 176–182, 4 fig.). Details of two autopsy cases.

s. Goto (T.) (Nagasaki Univ.), **Studies on candidiasis in the oral and the otolaryngological aspect** (pp. 183–193, 13 fig.). Clinical and histological findings.

t. Mizuno (S.) (Juntendo Univ. Sch. Med. Tokyo), **Problem of mixed infection in relation to Candida** (pp. 194–199). Of 39 cases (vagina, 33; buccal cavity, 17; rectum, 24) *C. albicans* was accompanied by 1 or more other yeasts in 8.

675. Drouhet (E.). **Quelques aspects mycologiques, pathogéniques et thérapeutiques des candidoses.** [Some mycological, pathogenic, and therapeutic aspects of moniliasis.]—*Bull. Soc. franç. Derm. Syph.*, **67**, 4, pp. 646–659, 1960.

This review, from Inst. Pasteur, Paris, is based on a 6-yr. series of isolations of *Candida* of which 350 of 500 identified as *C. albicans* were implicated in diverse pathological manifestations. Nystatin administered orally is still the treatment of choice but in septicaemic and granulomatous forms intravenous amphotericin B therapy is useful [cf. **4**, No. 629].

676. Kashkin (P. N.), Krassilnicov (N. A.), & Nekachalov (V. Y.). **Candida complications after antibiotic therapy.**—*Mycopathologia*, **14**, 3, pp. 172–188, 1961. [Germ. summ. 21 ref.]

This review from the Inst. of Antibiotics, Leningrad, is based on experience with 202 cases of *Candida* complications (including 70 skin, 38 mucous membrane, and 52 respiratory affections). These complications fall into 3 main groups: (1) mild *Candida* infection of the mucous membrane of the mouth and genitalia in children and adults; infections with a favourable prognosis which disappear spontaneously or after a short period of treatment with common antimycotic drugs; (2) clearly manifest but benign infections such as oral thrush, dermatitis of the major skin folds, vaginitis, and diarrhoea; (3) grave *Candida* infections with a tendency towards generalization. Nistatin [nystatin] proved to be the most effective anti-*Candida* drug.

677. Boyd (J. F.) & Chappell (A. G.). **Fatal mycetosis due to Candida albicans after combined steroid and antibiotic therapy.**—*Lancet*, **2**, 7192, pp. 19–22, 4 fig., 1961. [37 ref.]

Disseminated *C. albicans* infection in a 17-yr.-old girl, following prolonged steroid and antibiotic therapy for recurrent, acute rheumatic fever, is reported from Western Infirmary, Glasgow.

678. Hyun (B. H.) & Collier (F. C.). **Mycotic endocarditis following intracardiac operations. Report of four cases.**—*New Engl. J. Med.*, **263**, 26, pp. 1339–1341, 3 fig., 1960. [35 ref.]

From the Univ. Pa Hosp., Philadelphia, details are given of 4 fatal cases, in 37–40-yr.-old males, of *Candida albicans* endocarditis following cardiac surgery [**4**, No. 321, 520]. It is emphasized that the disease is clinically similar to bacterial endocarditis, and that diagnosis depends on the identification of the causal organism.

679. Kay (J. H.), Bernstein (S.), Feinstein (D.), & Biddle (Marjorie). **Surgical cure of Candida albicans endocarditis with open heart surgery.**—*New Engl. J. Med.*, **264**, 18, pp. 907–910, 4 fig., 1961. [23 ref.]

This is a report, from Los Angeles County General Hosp., of a case of *C. albicans* endocarditis [see above] in a 28-yr.-old Mexican proved during life and cured by the

removal of the infected portion of the tricuspid valve by open-heart surgery. *C. albicans* was cultured from blood from 27th–31st hospital day and in 6 of 17 blood cultures during the next 2 months when unsuccessful amphotericin B treatment preceded the successful surgery.

680. Coffey (C. M.), Everett (M. A.), & Kay (F. R.). **Amphotericin B in disseminated cutaneous candidiasis.**—*Arch. Derm., Chicago*, **83**, 6, pp. 1014–1015, 2 fig., 1961.

At Children's Memorial Hosp., Univ. Okla med. Center, Oklahoma City, a 4-yr.-old white girl with generalized *Candida albicans* infection of the skin received 2 courses of intravenous amphotericin B in conjunction with topical nystatin and topical amphotericin B therapy. The lesions regressed during treatment but gradually recurred when therapy was discontinued. It is considered that amphotericin B, although apparently not curative for this disease [**4**, No. 330], is of value in controlling infection until natural remission occurs.

681. Roth (F. J.) & Goldstein (M. I.). **Inhibition of growth of pathogenic yeasts by human serum.**—*J. invest. Derm.*, **36**, 5, pp. 383–387, 1 fig., 1961.

In further experiments at Dept Derm., Univ. Miami Sch. Med., Florida [**3**, No. 1097; **4**, No. 609] sera from 250 normal adults were shown to be inhibitory at 5–10% to *Candida albicans in vitro*. Other *C.* spp. and *Saccharomyces cerevisiae* were even more markedly inhibited.

The inhibitory complex was greatly reduced in patients with acute blood dyscrasias, but was not affected in patients with carcinoma, diabetes, lupus erythematosus, cutaneous moniliasis, or systemic mycoses; it was not decreased by oral therapeutic doses of tetracycline. Exposure of serum to 56° C. only slightly affected its inhibitory ability, but this was destroyed by prolonged heating at 60° C.

As the inhibition might have been a nutritional effect related to the composition of the diluent used, various nitrogen sources and increased dextrose and vitamin concentrations were tested but were without effect except in the case of biotin in lower concentrations of serum.

C. albicans was also inhibited by specimens of guinea-pig, horse, rabbit, dog, and pig sera.

682. Novák (E.) & Kelemen (S.). **Gátlószerek hatása a Candida albicans szaporodására, enzymeire és pathogenitására.** [The influence of inhibitive agents on the growth, enzymes, and pathogenicity of *C. albicans*.]—*Orsz. Közegész. Int. Mük., 1959*, pp. 195–208, 1 fig., 2 graphs, 1961. [Russ., Germ., Engl. summ. 40 ref.]

In tests with 14 antibacterial and 9 antifungal agents at the State Inst. Hyg., Budapest, Hungary, the growth of *C. albicans* was stimulated by oxytetracycline and to some extent by penicillin, and slightly inhibited by rovamycin and neomycin. Of fungicidal substances trichothecin and nystatin were most effective, though the latter's action was neutralizable by penicillin. The protective effect of streptomycin, viomycin, penicillin, and all 3 tetracyclines in experimental moniliasis in mice was only seemingly therapeutic, protection resulting from a peritonitis caused by the simultaneous intraperitoneal administration of the pathogen and of the antibiotic.

683. Mourad (S.) & Friedman (Lorraine). **Pathogenicity of Candida.**—*J. Bact.*, **81**, 4, pp. 550–556, 2 fig., 1961. [24 ref.]

At Tulane Univ. Sch. Med., New Orleans, La, 32 strs. of *C. albicans* from human sources were tested for virulence [**4**, Nos. 131, 327] by intravenous inoculation of 1×10^4 viable particles into mice, the route found in preliminary trials to result in

prolonged infection with small doses; 7 strs. were highly virulent, 11 avirulent, and 14 intermediate. In more detailed studies with 5 of the strs. almost immediate death was caused by large doses, but by selection of str. and dosage it was possible to induce death within 2–7 weeks. Nonviable sonically ruptured cells of *C. albicans* inoculated intravenously were also lethal, as were similarly treated cells of *C. robusta* and *C. reukaufii* of nonhuman origin.

684. Basu (N.), Basu (Rekha), Chatterjee (S. N.), & Banerjee (A. K.). **Slide agglutination as a presumptive test in the laboratory diagnosis of Candida albicans.**—*Bull. Calcutta Sch. trop. Med.*, **9**, 2, p. 59, 1961. [4 ref.]

Success (98%) with the slide agglutination technique for the presumptive diagnosis of *C. albicans* is claimed by using an anti-*C. albicans* serum after adsorption with other strains of *C.* as advocated by Rosenthal & Furnari [**3**, No. 876].

685. Kelly (J.), Kutscher (A. H.), & Tuoti (F.). **Pagano-Levin medium : readings with Candida albicans organisms at incubator and room temperature.**—*J. invest. Derm.*, **36**, 6, pp. 403–404, 1961.

At Dept Bact. and Dept Dentistry, New Rochelle Hosp., New Rochelle, N.Y., 43 strs. of *C. albicans* were studied for colorimetric characteristics on Pagano-Levin medium [**3**, No. 1499; **4**, No. 134] after incubation for 24, 31, 48, and 55 hr. at room temp. or 37° C. At 37° C. the colour intensity after 24 hr. was equal to that after 55 hr. at room temp. and did not increase significantly on further incubation.

686. MacLaren (J. A.). **The cultivation of pathogenic fungi on a molybdenum medium.**—*Mycologia*, **52** (1960), 1, pp. 148–152, 1961.

At Dept Obstetrics, Harvard med. Sch., Boston, Mass., none of several spp. of pathogenic yeasts and yeast-like fungi could be confused with *Candida albicans* when cultured on a medium containing phosphomolybdic acid [**3**, No. 879]. The medium is considered to be highly specific for the identification of *C. albicans*.

687. Taschdjian (Claire L.) & Kozinn (P. J.). **Metabolic studies of the tissue phase of Candida albicans induced in vitro.**—*Sabouraudia*, **1**, 2, pp. 73–82, 5 fig., 1961. [Germ. summ. 31 ref.]

At Dept Pediatrics, Maimonides Hosp., Brooklyn, N.Y., the tissue phase of *C. albicans*, characterized by mycelial elements and oval, thin-walled blastospores with small vacuoles, was obtained *in vitro* by culture on dialysates of human sera and plasmas. On these media all available amino acids and glucose were utilized without evolution of CO_2 or change of pH. Sulphydryl was not liberated and triphenyltetrazolium chloride was not reduced, suggesting that cell division *in vivo* involves different enzymatic pathways from those operative *in vitro*. Maintenance of tissue morphology appeared to be related to the utilization of all free serum amino acids in the presence of an unidentified, dialysable serum factor. This factor was inhibited in serum, but is apparently present in tissues which favour infection by *C. albicans*.

Serum proteins in whole serum and serum albumin and/or γ-globulin, added to dialysates, were not broken down, indicating that *C. albicans in vivo* may utilize only free amino acids without breaking down tissue protein. Such free, water-soluble amino acids are present in freshly formed keratin and it is suggested that interference with keratinization may be a factor in superficial moniliasis.

688. Von Szilvinyi (A.) & Rosenkrantz (U.). **Radiation effect on yeasts of the genus Candida Berkhout.**—*Nature, Lond.*, **190**, 4782, pp. 1212–1213, 1961.

At Inst. appl. Microbiol., Agric. Univ., Vienna, irradiation of *C. tropicalis* with

X-rays (1·54 Å) or UV light was found to damage the metabolism of RNA and inhibit cell division, leading to the formation of pseudomycelium. In both processes sulphydryl enzymes are involved; radiation damage was reduced by growing the organism in M/300 thiourea in glucose-peptone sol. for 18 hr. under continuous stirring at 27° C. before irradiation, suggesting that free radicals produced by irradiation oxidize SH-groups.

689. Maddy (K. T.), Crecelius (H. G.), & Cornell (R. G.). **Where can coccidioidomycosis be acquired in Arizona?**—*Ariz. Med.*, **18**, 7, pp. 184–194, 13 fig., 1961. [27 ref.]

Information already noticed [**4**, No. 353].

690. Levine (H. B.). **Purification of the spherule-endospore phase of Coccidioides immitis.**—*Sabouraudia*, **1**, 2, pp. 112–115, 1 fig., 1961.

A technique is described from Naval biol. Lab., Sch. Public Health, Univ. Calif., Berkeley, for the separation of the spherule-endospore phase from cultures of *C. immitis* for vaccination studies [**4**, Nos. 159, 548–9]. When aqueous suspensions of spherules, endospores, and mycelial elements from formalized cultures were shaken with chloroform the mycelial elements became aligned in parallel configurations around the emulsified chloroform droplets, as an apparent consequence of surface forces, and the droplets accumulated at the chloroform-water intersurface. Spherules and endospores were not thus affected and could be resuspended in the upper, aqueous phase of the system.

691. Foley (J. M.), Berman (R. J.), & Smith (C. E.). **X-ray irradiation of Coccidioides immitis arthrospores : survival curves and avirulent mutants isolated.**—*J. Bact.*, **79**, 4, pp. 480–487, 7 fig., 1960. [30 ref. *T.D.B.*, **57**, p. 847; *B.H.*, **35**, p. 773.]

At Naval biol. Lab., Sch. Public Health, Univ. Calif., Berkeley, suspensions of arthrospores of *C. immitis*, containing uninucleate and binucleate spores in a 1:1 ratio, were subjected to 1 kiloroentgen (kr.) approx./min. for varying time periods. The resultant survival curves were sigmoid in shape, and LD_{50} was 14 kr. approx. Two auxotrophic mutants isolated from the survivors of irradiation with 80–100 kr. were completely avirulent to mice at 10^2–10^4 spores/animal.

692. Roessler (W. G.), Converse (J. L.), & Geating (J. A.). **Virulence assay of Coccidioides immitis in embryonated eggs.**—*J. Bact.*, **81**, 2, pp. 226–232, 1 graph, 1961. [12 ref. *Biol. Abstr.*, **36**, No. 38191.]

A method for assaying the virulence of strs. of *C. immitis* by injection into embryonated chicken eggs is described from U.S. Army Chemical Corps, Fort Detrick, Frederick, Md. Yolk-sac inoculation of 5-day-old embryonated eggs gave the best results, death occurring usually 3–6 days after inoculation. Deaths were proportional to the amount of fungus injected; growth of the fungus in the egg reached 10^6 particles whether or not death occurred.

It was shown that death was not due to mechanics of injection or effects of chemical or non-viable biological material injected with the fungus, and also was probably not caused by depletion of nutrients.

693. McMath (W. F. T.) & Hussain (K. K.). **Cryptococcal meningo-encephalitis.**—*Brit. med. J.*, **1**, pp. 91–93, 2 fig., 1961. [12 ref.]

A report (with post mortem findings) from Neasden Hosp., London, of a fatal case of *Cryptococcus neoformans* infection in a 4-yr.-old boy.